



TailorMat Nanoparticles for Easy Clean Glass Surfaces

Mateiu, Ramona Valentina; Jensen, Henrik; Foverskov, Morten ; Brummersted Iversen, Steen

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Conference Information

Micro- and Nano-Engineering (MNE) is an international conference on micro- and nanofabrication using lithography and related techniques. On average the MNE conference has 400-500 participants. The conference proceedings are published in Microelectronic Engineering.

The MNE 2007 conference in Copenhagen will be the 33rd in a series that started in Cambridge in 1975, most recently held in Vienna (2005) and Barcelona (2006).

MNE has a sister conference, the Electron-, Ion-, and Photon-Beam and Nanotechnology Conference (EIPBN) in the USA and the Microprocesses and the Nanotechnology Conference (MNC) in Japan. It is a tradition that the author of the "Best paper" of at least one of the sister conferences is giving an invited talk at MNE.

Venue

The conference venue is the Radisson SAS Falconer which is a modern hotel-, meeting- and event-centre hosting major conferences, popular musicals and concerts. Public transportation, including the Copenhagen Metro subway, is within walking distance and the Copenhagen Airport is a mere 20 minute drive away.

Radisson SAS Falconer Centre
Falconer Allé 9
2000 Frederiksberg
Phone: + 45 38 15 80 01

Registration/Hospitality desk - opening hours during the conference

Sunday, 23 September	18:00-20:00 hrs.
Monday, 24 September	08:00-17:00 hrs.
Tuesday, 25 September	08:00-17:00 hrs.
Wednesday, 26 September	08:00-17:00 hrs.

Conference Structure

The MNE 2007 conference begins with a welcome reception on Sunday 23 September 2007 in the evening. The technical program starts on Monday 24 September and ends in the afternoon of Wednesday 26 September.

The program will feature plenary and invited presentations by a number of internationally recognised authors, contributed oral and poster presentations and a commercial exhibition. In addition to the plenary

sessions, there will be three parallel sessions. The oral presentations and posters have been reviewed by the International Program Committee which has also selected the plenary and invited talks.

Exhibition

The MNE 2007 commercial exhibition will start on Sunday September 23, 2007 in the afternoon followed by the MNE 2007 Welcome Reception. It will continue during the MNE 2007 conference until Wednesday September 26, 2007.

Publication of MNE 2007 Proceedings

The proceedings of the MNE 2007 conference will be published by Elsevier in the *Microelectronic Engineering Journal*, after the standard peer review process. Manuscripts have to be submitted on-line by 1 October 2007. Manuscripts delivered after this deadline will not be published along with the conference proceedings. Further information is available on www.mne07.org.

Social events

Welcome reception at Radisson SAS Falconer, Sunday 23 September 19:00 hrs.

A light buffet will be served and the exhibition will open.

Reception at Copenhagen City Hall, Monday, 24 September, 19:00 hrs.

The reception is hosted by the City Council of Copenhagen and will take place at the City Hall.

The reception will start punctually at 19:00 hrs.

Dress: Informal

Conference Dinner, Wallmans Salonger, Tuesday 25 September at 18:30 hrs.

Wallmans Salonger put on an amazing international dinner show, held in one of the capital's wonderful historic and centrally-located buildings, The Circusbuilding. While you are enjoying a fantastic four-course menu, artists will perform on 9 different stages scattered around the restaurant. Wallmans Salonger can guarantee an unforgettable evening, including a gourmet dinner, show and entertainment at the same time.

But it doesn't stop there: After a four-hour gastronomic and musical voyage for the senses, the Circusbuilding transforms to Copenhagen's biggest nightclub. The stage and the dancefloor are left to the guests for the rest of the night.

Dress: Informal

Committees

INTERNATIONAL STEERING COMMITTEE

Anja Boisen	Technical University of Denmark, DK
John R.A. Cleaver	University of Cambridge, UK
Massimo Gentili	Pirelli Laboratories Milano, IT
Kenji Gamo	University of Osaka, JP
Evangelos Gogolides	NCSR Demokritos Athens, GR
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Hans Loeschner	IMS Nanofabrication Vienna, AT
Francesc Pérez-Murano	CNM-CSIC Barcelona, ES
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Kurt Ronse	IMEC Leuven, BE
Urs Staufer	University of Neuchatel, CH
Emil van der Drift	Delft University of Technology, NL
Christophe Vieu	LAAS – CNRS Toulouse, FR

ORGANISING COMMITTEE MNE07

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Program Chair:

Anders Kristensen MIC, Technical University of Denmark, DK

Co-Program Chairs:

Fredrik Höök Lund Universitet, SE

Maria Nordström, MIC, Technical University of Denmark, DK

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Olivier Joubert

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Rüdiger Berger
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Ivo,W. Rangelow
JohannPeter
Reithmaier
Norbert Reng
HellaC. Scheer
Ines Stolberg
Michael Stuke

Greece
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Evangelos
Gogolides
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Massimo Gentili

Japan
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Latvia
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Netherlands
Pieter Kruit

NewZealand
MaanM. Alkaisi

P.R.China
Zhuming Liu

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PiotrB. Grabiec

Romania
Eugen Gheorghiu

Russia
Alexander Latyshev

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Montserrat alleja
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Francesc Pérez-
Murano
Josep Samitier

Sweden

Frederik Höök
Lars Montelius

Switzerland

Stefan Blunier
J. Brugger
Christian David
Michel Despont
MartinA.M. Gijss
Harry Heinzelmänn
Laura Heydermann
Adrian Ionescu
Veronica Savu
Urs Stauer
Guillermo
Villanueva

Taiwan

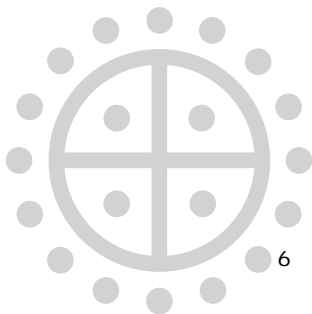
Fu-Hsiang Ko

Thailand
Songphol
Kanjachuchai

The Netherlands
Regina Luttge
FalcoC.M. VanDelft

UK
Peter Crawley
Rebecca Cheung
DavidR.S. Cumming
AlexP.G. Robinson

USA
John E.E. Baglin
Franco Cerrina
Stephen Y. Chou
Alex Driskill-Smith
Roxann L.
Engelstad
Ted H. Fedynyshyn
Brian J. Grenon
Tim Groves
Lloyd.R. Harriott
Daniel Herr
StellaW. Pang
HenryI. Smith
Steven Steen
Grant Willson
Stefan Wurm



Scientific Program

Sunday 23 September

- 18:00 - 20:00** **Registration**
- 19:00 - 20:30** **Exhibition Opening**
- 19:00** **Welcome reception.**

Monday 24 September

Welcome and Opening of MNE07 conference

- Place: Audience
08 :30 Dr. Anja Boisen
 Conference Chair
 Professor
 Technical University of Denmark, DK
- Hanne Severinsen
*Chairwoman of the parliaments Science and
Technology Committee*
- Anders Kristensen
Conference Program Chair
Associate Professor
Technical University of Denmark, DK

PLENARY

PL1 - Plenary session I

- Place: Audience
Session Chairs: Dieter Kern and Anders Kristensen

- PL1-1** **Low-cost MEMS for Applications in
Medical Technology**
9:00 Göran Stemme
 *Royal Institute of Technology (KTH),
STOCKHOLM, Sweden*

- PL1-2** **Power of One**
9:45 Yan Borodovsky
 *Intel Corporation, HILLSBORO, United
States of America*

10:30 Coffee break

Oral parallel sessions

MONDAY 24 SEPTEMBER

1A - Nanoscale Engineering & Fabrication I

Place : Audience
Session Chairs: Gabriel Abadal Berini and Søren Dohn

1A-1 Large Area Arrays of Metal Nanowires

11:00 Vaida Auzelyte¹, Harun H. Solak¹, Yasin Ekinci¹, Robert MacKenzie², Vörös Janos², Sven Olliges², Ralph Spolenak²
¹Paul Scherrer Institute, VILLIGEN, Switzerland
²ETH, ZÜRICH, Switzerland

1A-2 Tunable surface plasmon resonance wavelength of gold nanoparticles embedded in lead zirconate titanate (PZT) films with an applying external electric field

11:20 Hsuen-Li Chen, K. C. Hsieh, D. H. Wan
National Taiwan University, TAIPEI, Taiwan

1A-3 In-situ observation of 3-D nano-structure growth on focused-ion-beam chemical-vapor-deposition by scanning electron microscope

11:40 Reo Kometani
University of Hyogo, HYOGO, Japan

1A-4 Patterned conducting polymers for all-polymer cell electroporation microsystems

12:00 Niels Larsen¹, Thomas S. Hansen², Keld West³, Ole Hassager², Noemi Rozlosnik¹
¹Risoe National Laboratory - DTU, ROSKILDE, Denmark, ²Department of Chemical Engineering, DTU, LYNGBY, Denmark,
³Dept. of Chem., University of Copenhagen, COPENHAGEN, Denmark

1B - Process Diagnostics & Control

Place : Room 101
Session Chairs: Helmut Schift and NN

1B-1 Imprintability of polymers for thermal nanoimprint

11:00 H.-C. Scheer, N Bogdanski, M Wissen, S Möllenbeck
University of Wuppertal, WUPPERTAL, Germany

1B-2 Computationally efficient modelling of pattern dependencies in the micro-embossing of thermoplastic polymers

11:30 H.K. Taylor¹, D.S. Boning¹, C. Iliescu², B. Chen²
¹*MIT, CAMBRIDGE, United States of America*
²*IBN, SINGAPORE, Singapore*

1B-3 The accuracy metrology challenge for microelectronic advance node developments through CD-AFM and CD-SEM

11:50 Johann Foucher, Pascal Faurie
CEA/LETI-MINATEC, GRENOBLE, France

1B-4 Dopant profiling and electrical junction delineation in the SEM.

12:10 Augustus Chee¹, Conny Rodenburg², Colin Humphreys¹
¹*University of Cambridge, CAMBRIDGE, United Kingdom*
²*University of Sheffield, SHEFFIELD, United Kingdom*



1C - Nanodevices I

Place : Room 201
Session Chairs: Guillermo Villanueva and Zachery Davis

1C-1 Fabrication of 22 nm T-gates for HEMT applications

11:00 Steven Bentley, Xu Li, David Moran, Iain Thayne
University of Glasgow, GLASGOW, United Kingdom

1C-2 Self-assembled branched InAs nanowires for nanoelectronic applications

11:20 Dmitry Suyatin, Jie Sun, A. Fuhrer, D. Wallin, L.E. Froberg, L.S. Karlsson, I. Maximov, L.R. Wallenberg, L. Samuelson, H.Q. Xu
Lund University, LUND, Sweden

1C-3 Toolkit for manipulation and characterization of nanostructures

11:40 Peter Bøggild, Kristian Mølhave
Technical University of Denmark, KGS. LYNGBY, Denmark

1C-4 Vertical Devices of self-assembled hybrid organic/inorganic monolayers based on tungsten polyoxometalates: a step towards molecular electronic devices

12:10 Eleni Makarona¹, Eleftherios Kapetanakis¹, Dimitrios Velessiotis¹, Antonios Douvas¹, Panagiotis Argitis¹, Pascal Normand¹, Teodor Gotszalk², Mirosław Woszczyńska², Nikos Glezos¹
¹*NCSR „Demokritos”, ATHENS, Greece*
²*F.of Microsystem Electronics & Photonics, WROCLAW, Poland*

12:30 End of session

Lunch

2A - Micro & Nanosystems for Biology I

Place : Audience
Session Chairs: Evangelos Gogolides and Oliver Geschke

2A-1 Cell-based field effect devices for cell functional analysis

14:00 Toshiya Sakata¹, Yuji Miyahara²
¹*The University of Tokyo, TOKYO, Japan*
²*National Institute for Materials Science, TSUKUBA, Japan*

2A-2 Multiplex polymerase chain reaction (PCR) on a SU-8 chip

14:30 Troels Balmer Christensen¹, Dang Doung Bang², Anders Wolff³
¹*Technical University of Denmark, KGS. LYNGBY, Denmark*
²*Department of Poultry, Fish and Fur Anim, DK-8200 ÅRHUS N., Denmark*
³*MIC - Department of Micro and Nanotechno, DK-2800 KGS. LYNGBY, Denmark*

2A-3 Fabrication and characterization of plasmonic nanolens for applications in Biophotonics

14:50 Francesco De Angelis
Università della Magna Graecia, CATANZARO, Italy

2A-4 Biodegradable polymer tubes with controlled 3D micro- and nanotopography

15:10 Nikolaj Gadegaard, Kris Seunarine, Mohamed Khan, Osian Meredith, Chris Wilkinson, Mathis Riehle
University of Glasgow, GLASGOW, United Kingdom

2B - Nanoimprint Lithography & Technology I

Place : Room 101

Session Chairs: Clivia Torres and Santos Merino

2B-1 Minimizing Linewidth Roughness in Step and Flash Imprint Lithography

14:00 D Resnick

Molecular Imprints, AUSTIN, TX, United States of America

2B-2 Fabrication and characterisation of nanoimprinted band edge lasers

14:20 Vincent Reboud¹, P. Lovera¹, N. Kehagias², M. Zelsmann³,

Freimut Reuther⁴, Gabi Gruetzner⁵, G. Redmond¹, C.M. Sotomayor Torres¹,

¹*Tyndall National Institute, CORK, Ireland,*

²*Tyndall National Institute, University C, CORK, Ireland,*

³*LTM-CNRS, GRENOBLE CEDEX 9, France,*

⁴*Micro Resist Technology GmbH, BERLIN, Germany,*

⁵*Microresist technology GmbH, BERLIN, Germany*

2B-3 Three Dimensional Microsystems by Reversal Nanoimprint for Biomedical Applications

14:40 Stella Pang

University of Michigan, ANN ARBOR, MI, United States of America

2B-4 Nanoimprint applications toward 22nm node CMOS devices

15:10 Ikuo Yoneda, Shinji Mikami, Masamitsu Ito,

Tetsuro Nakasugi, Tatsuhiko Higashiki

Toshiba Corp., YOKOHAMA, Japan

2B-5 Direct Nanoimprinting of Metals

15:30 Stefano Buzzi¹, Yasin Ekinci¹, Franck Robin², Victor Callegari³, Jörg F. Löffler¹

ETH Zurich, Metal physics and Technology, ZURICH, Switzerland

ETH Zurich, Electronics Laboratory, ZURICH, Switzerland

EMPA, Electronics/Metrology Laboratory, DÜBENDORF, Switzerland

2C - Nanodevices II

Place : Room 201

Session Chairs: Rüdiger Berger and Maria Nordström

- 2C-1 Micro/Nanobiosensor technology platforms for clinical diagnosis**
14:00 Laura M. Lechuga
CNM-CSIC, TRES CANTOS, MADRID, Spain
- 2C-2 Fabrication and characterization of Ta2O5 photonic feedback structures**
14:20 Thorsten Wahlbrink
AMO GmbH, AACHEN, Germany
- 2C-3 Fabrication of Bragg Gratings with Deep Grooves in LiNbO3 Ridge Optical Waveguides**
14:50 Asamira Suzuki
Matsushita Electric Industrial Co., Ltd., KYOTO, Japan
- 2C-4 Plasmonic Components Fabrication by Lithographic Patterning and Nanoimprint**
15:10 Alexandra Boltasseva¹, Kasper Jørgensen², Rasmus Pedersen², Kristian Leosson³, Rasmus Nielsen², Irene Fernandez-Cuesta⁴, Ilya Radko⁵, Sergey Bozhevolnyi⁵, Anders Kristensen²
¹Technical University of Denmark, LYNGBY, Denmark
²MIC, DTU, LYNGBY, Denmark
³University of Iceland, REYKJAVIK, Iceland
⁴CNM-IMB, BARCELONA, Spain
⁵University of Aalborg, AALBORG, Denmark
- 2C-5 Large-scale arrays of tunnel junctions with magnetic heterodimers**
15:30 Pasquale Marzo, Pasquale Marzo, Luca Sanarica, Roman Krahne, Antonio Della Torre, Elisabetta Primiceri, Angela Fiore, Teresa Pellegrino, Liberato Manna, Roberto Cingolani, Ross Rinaldi, Giuseppe Maruccio
Isufi, Università del Salento, LECCE, Italy
- 15:50 End of session

Poster session I and II

16:00-17:00 Poster session I

17:00-18:00 Poster session II

Social event

19:00 Reception at the Copenhagen City Hall



TUESDAY 25 SEPTEMBER

3A - Resists & Resist Processing

Place : Audience
Session Chairs: Peter Hudek and Pieter Kruit

3A-1 High aspect ratio micro/nano machining with proton beam writing on aqueous developable - easily stripped negative chemically amplified resists

09:00 Margarita Chatzichristidi¹, Ioannis Raptis¹, Jeroen Anton Van Kan², Frank Watt²
¹NCSR „Demokritos“, AGHIA PARASKEVI, Greece
²CIBA, Physic Dept. Nat. Univ. of Singapore, SINGAPORE, Singapore

3A-2 Novel methods to pattern polymers for microfluidics

09:30 Cristina Martin¹, Andreu Llobera¹, T. Leïchlé², Guillermo Villanueva³, Anja Voigt⁴, V. Fakhfour³, J. Yeon³, N. Berthet², J. Bausells¹, Gabi Gruetzner⁴, L. Nicu², J. Brugger³, Francesc Perez-Murano¹
¹CNM-IMB-CSIC, BARCELONA, Spain
²LAAS-CNRS, TOULOUSE, France
³LMIS1-EPFL, LAUSANNE, Switzerland
⁴Microresist technology GmbH, BERLIN, Germany

3A-3 Nanoindentation testing of SU-8 photoresist mechanical properties

09:50 Ala'aldeen Al-Halhouli¹, Ingo Kampen², Thomas Krah¹, Stephanus Büttgenbach¹
¹Institute for Microtechnology, BRAUNSCHWEIG, Germany
²Institute for Particle Technology, BRAUNSCHWEIG, Germany

3A-4 Epoxide Functionalized Molecular Resists for High Resolution Electron Beam Lithography

10:10 Clifford Henderson¹, Richard Lawson¹, Cheng-Tsung Lee¹, Robert Whetsell¹, Wang Yueh², Jeanette Roberts², Laren Tolbert¹
¹Georgia Institute of Technology, ATLANTA, United States of America
²Intel Corporation, HILLSBORO, OR, United States of America

3B - Nanoimprint Lithography & Technology II

Place : Room 101
Session Chairs: Hella Sheer and NN

3B-1 **Advances in CLIPP for the fabrication of surface modified micro-fluidic devices in non - fluorescing UV cured materials.**

09:00 Mike Watts¹, R. Sebra², H. Simms², K. Masters², T. Haraldsson², K. Anseth², C. Bowman²

¹Impattern Solution, AUSTIN, United States of America

²Department of Chemical and Biological En, UNIVERSITY OF COLORADO, United States of America

3B-2 **Sub-micron sized patterning on flexible PET substrate using flexible DLC coated PVC template**

09:30 Hee-Chul Lee¹, Sung-Hoon Hong², Heon Lee²

¹LG electronics, DAEJEON, South-Korea

²Korea University, SEOUL, South-Korea

3B-3 **Optical Negative Index Meta-materials at Near-IR Wavelength Fabricated by Nanoimprint Lithography**

09:50 Wei Wu¹, Evgenia Kim², Ekaterina Ponizovskaya¹, Zhaoning Yu¹, Yongmin Liu², Alex Bratkovsky¹, Yuen Ron Shen², Nick Fang³, Xiang Zhang², Shih-Yuan Wang¹, R. Stan Williams¹

¹Hewlett-Packard, PALO ALTO, United States of America

²University of California, Berkeley, BERKELEY, CA, United States of America

³University of Illinois, URBANA-CHAMPAIGN, IL, United States of America

3B-4 **Nanoimprint for future non-volatile memory and logic devices**

10 :20 Matthias Meier, Christian Nauenheim, Sandra Gilles, Dirk Mayer, Carsten Kügeler, Rainer Waser
Forschungszentrum Juelich GmbH, JÜLICH, Germany



3C - Maskless Litho. & Pattern Transfer Tech.

Place : Room 201
Session Chairs: Jürgen Brügger and Falco C.M. Van Delft

- 3C-1 Etching of sub-micrometer structures through Stencil**
09 :00 Guillermo Villanueva, Oscar Vazquez-Mena, Marc van den Boogaart, K Sidler, V Savu, J Brugger
Ecole Polytechnique Fédérale de Lausanne, LAUSANNE, Switzerland
- 3C-2 Enhanced robustness of the cryogenic process for silicon deep etching**
09:20 El Houcine Oubensaid¹, Thomas Tillocher², Remi Dussart², Philippe Lefaucheux², Pierre Ranson², Xavier Mellhaoui², Mohamed Boufnichel³, Lawrence Overzet⁴, Laurianne Pichon², Corinne Duluard²
¹*Gremi, ORLEANS CEDEX 2, France*
²*GREMI, ORLEANS, France*
³*STMicroelectronics, TOURS, France*
⁴*UTDallas, RICHARDSON, United States of America*
- 3C-3 Very high resolution etching of magnetic nanostructures in organic gases**
09:40 Chris Wilkinson¹, X Kong¹, D Krasa², W Williams², J Chapman¹, S McVitie¹, H P Zhou¹
¹*University of Glasgow, GLASGOW, United Kingdom*
²*School of GeoSciences, EDINBURGH, United Kingdom*
- 3C-4 Nano-xerography - Guiding the assembly of nanoscale building blocks**
10:00 Andreas Stemmer, Livia Seemann, Dominik Ziegler, Nicola Naujoks
ETH Zurich, ZURICH, Switzerland

10:30 Coffee break

4A - Micro and Nanosystems for Biology II

Place : Audience

Session Chairs: Christophe Vieu and Harry
Heinzelmann

4A-1 Nanotechnology and biointerfaces

11:00 Bengt Kasemo

*Chalmers Univ. Techn., GOTHENBURG,
Sweden*

4A-2 Evaporation based micropump integrated into scanning force microscope probe

11:30 Friedjof Heuck¹, Thomas Hug², Terunobu
Akiyama¹, André Meister³, Harry
Heinzelmann³, Nicolas F. De Rooij¹, Urs
Staufer¹

¹*Institute of Microtechnology, NEUCHÂTEL,
Switzerland*

²*Helbling Technik, ZURICH, Switzerland*

³*CSEM, NEUCHATEL, Switzerland*

4A-3 Contact force control of piezoresistive cantilevers with in-plane nanotips for femtoliter droplet deposition

11:50 Daisuke Saya, Thierry Leïchlé, Liviu Nicu,
Jean-Bernard Pourciel, Fabrice Mathieu,
Christian Bergaud

LAAS-CNRS, TOULOUSE, France

4A-4 Three-dimensional optical readout of microcantilever arrays: towards a DNA biochip based on nanomechanics

12:10 Montserrat Calleja, Johan Mertens, Daniel
Ramos, Javier Tamayo

Imm-Csic, TRES CANTOS, Spain

4A-5 On Chip Differentiation of Human Mesenchymal Stem Cells into Adipocytes

12:30 Yong Chen¹, X.F Ni¹, C Crozatier¹, L
Sensebé², Li Wang¹, Y Fan¹, P.D. He³

¹*Ecole Normale Supérieure, PARIS, France*

²*Etablissement Français du Sang Centre-At,
TOUR, France*

³*East China Normal University, SHANGHAI,
France*

4B - Nanoscale Engineering & Fabrication II

Place : Room 101
Session Chairs: Francesc Perez Murano and Kristian Mølhave

4B-1 Electrical characterization of suspended Pt nanowires grown by Electron Beam-Induced Deposition (EBID) with water vapour assistance

11:00 Gian Carlo Gazzadi, Stefano Frabboni, C. Menozzi, L. Incerti
CNR - INFM S3, MODENA, Italy

4B-2 Templated fabrication of nanoring arrays based on laser interference lithography

11:20 Ran Ji¹, Woo Lee², Mato Knez², Roland Scholz², Kornelius Nielsch², Ulrich Goesele²
¹NIL Technology, KONGENS LYNGBY, Denmark
²MPI Halle, HALLE, Germany

4B-3 ICP-RIE etching of high aspect ratio GaAs nanowires based on Cl₂/N₂ chemistry

11:40 Laurent Jalabert
LAAS-CNRS / The University of Toulouse, TOULOUSE, France

4B-4 Nanofabrication of anti-reflective quartz surfaces using block copolymer structures

12:00 Christian David¹, Pratap Sahoo¹, Vaida Auzelyte¹, Yasin Ekinci¹, Harun Solak¹, Elizabeth Tocce², Chi-Chun Liu², Karl Stuen², Paul Nealey²
¹Paul Scherrer Institut, VILLIGEN, Switzerland
²University of Wisconsin, MADISON, United States of America

4B-5 Colloidal Nanocrystals: Novel Perspective for Micro and Nano Fabrication Towards Opto-Electronic and Sensing Applications

12:20 M. Lucia Curri
CNR Italian National Research Council, BARI, Italy

4C - Electron & Ion Beam Lithography

Place : Room 201

Session Chairs: Alex Robinson and John Cleaver

4C-1 Integration of EBDW of one entire metal layer as substitution for optical lithography in 220 nm node microcontrollers

11 :00 Johannes Kretz¹, Heiko Röper², Christian Arndt¹, Thomas Bischoff³, Kang-Hoon Choi¹, Guido Goldbeck³, Markus Gunia², Christoph Hohle¹, Tarek Lutz¹, Ulf Schubert², Ivonne Schwerdtfeger², Frank Thrum¹, Martin Vennekamp²

¹Qimonda Dresden GmbH & Co. OHG, DRESDEN, Germany

²Infineon Technologies Dresden GmbH & Co, DRESDEN, Germany

³Infineon Technologies AG, NEUBIBERG, Germany

4C-2 First deflection results of multi-electron-beam blanker array for sub-10 nm electron beam induced deposition

11:30 Carel Heerkens¹, M.J. Van Bruggen², Y. Zhang², B. Van Someren², P. Kruit²

¹TU Delft, DELFT, The Netherlands

²TU Delft, charged particle optics tnw, DELFT, The Netherlands

4C-3 A Single-Stranded Self-Aligned Carbon Nanotube Emitter Array

11:50 Justin Ho, Takahito Ono, Masayoshi Esashi
Tohoku University, SENDAI, Japan

4C-4 Prototyping with focused ion beams: matching the control of pattern dimensions with the control of material properties

12:10 Oliver Wilhelmi, Steve Reyntjens
FEI Company, EINDHOVEN, The Netherlands

4C-5 Nano-pillars and nano-holes fabricated by Ion Beam Induced Deposition

12:30 Ping Chen, Paul Alkemade, Huub Salemink, Mengyu Wu
Delft University of Technology, DELFT, The Netherlands

13:00 End of session

Lunch

PL2 - Plenary session II

Place : Audience

Session Chairs: Lars Montelius and Alexandra Boltasseva

PL2-1 Nanobio interface using neurons and receptor proteins

14:30 Keiichi Torimitsu

NTT Basic Research Laboratories, ATSUGI, KANAGAWA, Japan

PL2-2 Silicon nanophotonics on CMOS

15:15 Dries Van Thourhout

Ghent University/IMEC, GENT, Belgium

16 :00 Coffee break



5A - Nanoscale Engineering and Fabrication III

Place : Audience

Session Chairs: Andreas Stemme and Harun Solak

5A-1 Self-assembled InAs QDs grown on AlGaAs surfaces

16:30 Matthias Schramboeck, A. M. Andrews, P. Klang, W. Schrenk, G. Strasser
TU Vienna, VIENNA, Austria

5A-2 Fast thermal nanoimprint lithography by a stamp with integrated heater

16:50 Massimo Tormen
TASC laboratory, BASOVIZZA (TS), Italy

5A-3 Silicon Fresnel zone plates for high heat load x-ray microscopy

17 :10 Joan Vilà-Comamala¹, Konstantins Jefimovs², Jörg Raabe³, Burkhard Kaulich⁴, Christian David³
¹*Laboratori de Llum Sincrotró, BELLATERRA, Spain*
²*EMPA - Material Science & Technology, ZURICH, Switzerland*
³*Paul Scherrer Institut, VILLIGEN-PSI, Switzerland*
⁴*ELETTRA Synchrotron, TRIESTE, Italy*



5B - Nanodevices III

Place : Room 101

Session Chairs: Zoran Djuric and Andris Sternberg

5B-1 Single-electron tunnelling via quantum dot cavities built on a silicon suspension nanobridge

16:30 Jun Ogi¹, Yoshishige Tsuchiya¹, Shunri Oda¹, Hiroshi Mizuta²

¹Tokyo Institute of Technology, TOKYO, Japan

²University of Southampton, SOUTHAMPTON HAMPSHIRE, United Kingdom

5B-2 Prospect for Logic-on-a-wire: Omega-gate NMOS Inverter Fabricated on Single Si Nanowire

16:50 Kirsten Moselund, Didier Bouvet, Adrian Ionescu

EPFL, LAUSANNE, Switzerland

5B-3 Focused Ion Beam Engineered Nanogap in a Palladium Microwire as a Mechanical Switch for Hydrogen Detection

17:10 Thomas Kiefer¹, Fred Favier², Oscar Vazquez-Mena¹, Guillermo Villanueva¹, Juergen Brugger¹

¹Ecole Polytechnique Federale de Lausanne, LAUSANNE, Switzerland

²CNRS Universite Montpellier 2, MONTPELLIER, France

5C - Electron and Ion Beam Lithography II

Place : Room 201

Session Chairs: Christian David and Jose Maria de Tercsa

5C-1 Chemically Amplified Molecular Resists for E-Beam Lithography

16:30 Alex Robinson, Francis Gibbons, Sara Diegoli, Mayanditheuar Manickam, Jon Preece, Richard Palmer
University of Birmingham, BIRMINGHAM, United Kingdom

5C-2 Nano-dot and pit arrays with a pitch of 25 nm x 25 nm fabricated by EB drawing, RIE and nano-imprinting toward 1 Tb/in² storage

16:50 Sumio Hosaka, Zulfakri Mohamad, Masumi Shirai, Hirotaka Sano, You Yin, Akihira Miyachi, Hayato Sone
Gunma University, KIRYU, Japan

5C-3 Improved aspect ratio in high resolution features with low voltage converted-SEM lithography on negative resist HSQ

17:10 Maria Chiara Ubaldi
CoreCom, MILANO, Italy

17:30 End of session

Social event

18:00 Conference dinner arrival and welcome drink
19:00 Start of dinner show

WEDNESDAY 26 SEPTEMBER

PLENARY

PL3 - Plenary session III

Place : Audience

Session Chairs: Stella Pang and Anja Boisen

PL3-1 Nanostructures and functional glass surfaces

09:00 Elin Sondergard
Surface du Verre et Interfaces,
AUBERVILLIERS, France

6A - Microsystems & Their Fabrication I

Place : Audience

Session Chairs: Joan Bausells and Adrian Ionescu

6A-1 A Compact and Disposable Transdermal Drug Delivery System

10:00 Marco Matteucci¹, M Casella², M Bedoni³, M Donetti³, F Gramatica², E Di Fabrizio⁴
¹*Sincrotrone Trieste, TRIESTE, Italy*
²*Fondazione Don Gnocchi IRCCS-ONLUS, MILAN, Italy*
³*Università degli Studi di Milano, MILAN, Italy*
⁴*TASC-INFM-CNR, TRIESTE, Italy*

6A-2 Miniaturized, highly tunable diffractive optical elements based on electroactive polymers

10:30 Manuel Aschwanden, Andreas Stemmer
ETH Zurich, ZURICH, Switzerland

6A-3 Development of fine-pitch current carrying conductors for interconnection of a silicon mass flow sensor on a polymeric microfluidic chip

10:50 Johanna May¹, Ricardo Ehrenpfordt¹, Peter Rothacher¹, Claas Müller², H. Reinecke²
¹*Robert Bosch GmbH, GERLINGEN, Germany*
²*IMTEK, FREIBURG, Germany*

- 6A-4** **Optimized SU-8 processing for the fabrication of thin polymer cantilevers**
 11:10 Stephan Keller¹, Gabriela Blagoi¹, Daniel Haefliger², Anja Boisen¹
¹*Technical University of Denmark, LYNGBY, Denmark*
²*Harting Mitronics, BIEL, Switzerland*
- 6A-5** **Monolithic integration of MEMS-CMOS RF resonators in the VHF and UHF bands. A comparative study of 0.35-um and 0.18-um technologies**
 11 :30 Gabriel Abadal¹, Jordi Teva¹, Gonzalo Murillo¹, Joan Lluís López¹, Arantxa Uranga¹, Jaume Verd², Francesc Torres¹, Jaume Esteve³, Francesc Pérez-Murano³, Núria Barniol¹
¹*Universitat Autònoma de Barcelona, BARCELONA, Spain*
²*Universitat de les Illes Balears, PALMA DE MALLORCA, Spain*
³*Inst. de Microelectrònica de Barcelona, BARCELONA, Spain*



6B - Nanoscale Engineering & Fabrication IV

Place : Room 101

Session Chairs: Didier Louis and Peter Bøggild

6B-1 Aligned Quantum Dot Molecules with 4 Satellite Dots by Self-Assembly Approach

10:00 Somsak Panyakeow, N. Siripitakchai, Cho Cho Thet, P. Changmoang, S. Thainoi, S. Kanjanachuchai, S. Panyakeow
Chulalongkorn University, BANGKOK, Thailand

6B-2 Broad band transmission characterisation of silicon nitride photonic crystals for visible wavelengths

10 :20 J Kouba, S. Kiss, M. Kubalski, B. Loechel
BESSY GmbH, BERLIN, Germany

6B-3 Pushing the limits of nano-patterning with extreme ultraviolet interference lithography

10:40 Harun Solak
Paul Scherrer Institut, VILLIGEN PSI, Switzerland

6B-4 Nanoscale Surface Patterning: Directed Assembly and Microcontact Printing of Nanoparticles

11:10 Andrea Decker, Tobias Kraus, Laurent Malaquin, Heinz Schmid, Heiko Wolf
IBM Zurich Research Laboratory, RUESCHLIKON, Switzerland

6B-5 Low-reflective hydrophobic silicon nanoglass

11 :30 Jiann Shieh¹, Bing-Shia Chen², Fu-Ju Hou¹, Wen-Hsien Huang¹, Chao-Chia Cheng²
¹National Nano Device Laboratory, HSINCHU, Taiwan
²Chung Hua University, HSINCHU, Taiwan

6C - Photon Lithography & Mask Technology

Place : Room 201

Session Chairs: Yan Boradovsky and Günther Stangl

6C-1 Increase of resolution by applying phase mask concept in EUV lithography

10:00 Aura Nugrowati¹, Marieke Richard²,
Christophe Constancias², Silvania Pereira¹,
Joseph Braat¹, Jean-Yves Robic²
¹*Delft University of Technology, DELFT, The Netherlands*
²*CEA-Leti Minatoc, GRENOBLE, France*

6C-2 Polarimetry of illumination for 193-nm immersion lithography

10 : 20 Hiroshi Nomura
Toshiba Corp., YOKOHAMA, Japan

6C-3 Using Optical Proximity Correction Techniques to Compensate for Flare in Extreme Ultraviolet Lithography

10: 40 Lawrence Melvin¹, Brian Ward¹, Daniel
Ritter¹, Alan Myers², In sung Kim³, Anne-
Marie Goethals⁴, Rik Jonckheere⁴, Gian
Francesco Lorusso⁴
¹*Synopsys, HILLSBORO, United States of America*
²*Intel, HILLSBORO, United States of America*
³*Samsung, SEOUL, South-Korea*
⁴*IMEC, LEUVEN, Belgium*

6C-4 Inspection of EUVL mask blank defects and patterned masks using EUV photoemission electron microscopy

11 : 00 Jingquan Lin¹, J Maul², N Weber³, C Holfeld⁴,
M Merkel³, G Schoenhense², U Kleineberg¹
¹*University of Munich, GARCHING, Germany*
²*University of Mainz, MAINZ, Germany*
³*Focus-GmbH, HUENSTETTEN-KESSELBACH, Germany*
⁴*AMTC, DRESDEN, Germany*

6C-5 Manufacturing Lithography for 32nm Half-Pitch and Beyond

11:20 Michael Lercel
SEMATECH / IBM, AUSTIN, TX, United States of America

11 : 50 End of session

Lunch

7A - Microsystems & Their Fabrication II

Place : Audience

Session Chairs: Stefan Blunier and Urs Staufer

7A-1 Topology Optimized Electrothermal Polysilicon Microgrippers

13:00 Özlem Sardan, Peter Bøggild, Ole Sigmund, Kristian Mølhave
Technical University of Denmark DTU, COPENHAGEN, Denmark

7A-2 Antireflective nanostructured microlenses

13:20 Birgit Päivänranta¹, Pierre-Yves Baroni², Toralf Scharf², Wataru Nakagawa², Hans Peter Herzig², Markku Kuittinen¹
¹*University of Joensuu, JOENSUU, Finland*
²*Institute of MicroTechnology, NEUCHÂTEL, Switzerland*

7A-3 Multi-Parameter POCT Device for Blood Diagnostic

13 : 40 Reinhold Jurischka, Christoph Blattert, Isam Tahhan, Andreas Schoth, Claas Müller, Holger Reinecke
University of Freiburg - IMTEK, FREIBURG, Germany

7A-4 RF MEMS Capacitive Switch on Semi-Suspended CPW using Low-Loss HRS

14 : 00 Montserrat María Fernandez-Bolaños Badia¹, Julien Perruisseau-Carrier², Paolo Dainesi³, Adrian Mihai Ionescu³
¹*EPFL, Electronics Laboratory, LAUSANNE, Switzerland*
²*EPFL LEMA, LAUSANNE, Switzerland*
³*EPFL, LAUSANNE, Switzerland*

7A-5 Dynamic behavior of the tuning fork AFM probe

14 : 20 Dara Bayat, T. Akiyama, N.F. De Rooij, U. Staufer
University of Neuchatel, NEUCHATEL, Switzerland

7B - Nanoimprint Lithography and Technology III

Place : Room 101

Session Chairs: Alkaisi Maan and Wei Wu

**7B-1 Pressure and Resist Thickness
Dependency of Resist
Time Evolutions Profiles in Nanoimprint
Lithography**

13 :00 Yoshihiko Hirai¹, Yuuki Onishi², Satoaki Tanabe¹, Mayuko Shibata¹, Takuya Iwasaki², Yasuroh Iriye²

¹Osaka Pref. Univ., SAKAI, Japan

²Mizuho Inf. and Res. Institute, TOKYO, Japan

**7B-2 Determination of stress build-up during
NIL process in triangular polymer
structures**

13:20 Irene Fernandez-Cuesta¹, Xavier Borrisé¹, Aritz Retolaza², Santos Merino², David Mendels³, Ole Hansen⁴, Anders Kristensen⁴, Francesc Perez-Murano¹

¹Centro Nacional de Microelectrónica -CNM, BELLATERRA, Spain

²Fundación TEKNIKER, EIBAR, Spain

³National Physical Laboratory, TEDDINGTON, United Kingdom

⁴Department of Micro and Nanotechnology, LYNGBY, Denmark

**7B-3 A study of concave grating fabricated
by UV-nanoimprint lithography**

13:40 Yung-Pin Chen, Yuet-Ping Lee, Lon Alex Wang

National Taiwan University, TAIPEI, Taiwan

**7B-4 Nanoimprint Lithography for three-
dimensional
nanopatterning**

14:00 Clivia M Sotomayor Torres¹, N. Kehagias¹, V. Reboud¹, C Chansin¹, M. Zelsmann², C. Jeppesen³, C. Schuster⁴, M. Kubenz⁴, F. Reuther⁴, G. Gruetzner⁴

¹University College Cork, CORK, Ireland

²LTM-CNRS, c/o CEA-LETI, GRENOBLE CEDEX 9, France

³Dept. Micro and Nanotechnology, Technica, KGS. LYNGBY, Denmark

⁴Micro resist technology GmbH, BERLIN, Germany

7C - Micro and Nanosystems for Biology III

Place : Room 201

Session Chairs: Winnie Svendsen and NN.

7C-1 Artificial nanostructured biointerfaces

13:00 Duncan Sutherland

University of Aarhus, AARHUS, Denmark

7C-2 Design and fabrication of a micromechanical capacitive DNA sensor array

13:30

Vasiliki Tsouti¹, Stavros Chatzandroulis¹,
Dimitrios Goustouridis¹, Pascal Normand¹,
Dimitrios Tsoukalas²

¹NCSR „Demokritos“, ATHENS, Greece

²NTUA, Department of Applied Sciences,
ATHENS, Greece

7C-3 Optical readout system for DNA food pathogens detection with disposable RT-PCR SU-8/glass chip

13 :50

Rafal Walczak¹, Jan Dziuban¹, Bang Dang
Duong², Jesus Ruoano-Lopez³

¹Institute of Electron Technology, WARSAW,
Poland

²Danish Technical University, AARHUS,
Denmark

³Ikerlan, ARRASATE-MODRAGÓN, Spain

7C-4 Plasma Patterning of Fluorescence-based Oxygen Sensors

14:10

Volker Nock¹, Richard Blaikie¹, Tim David²

¹MacDiarmid Institute, CHRISTCHURCH,
New Zealand

²Centre for Bioengineering, CHRISTCHURCH,
New Zealand

14 :40 End of session

PL4 - Plenary session IV

Place : Audience

Session Chairs: John Randall and C. Vieu

PL4-1 Trends in MicroRobotics

15:00

Bradley Nelson

ETH Zurich, Switzerland

PL4-2 Recent Advances in NEMS

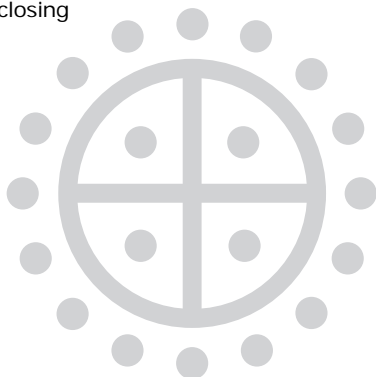
15:45

Michael Roukes

*Caltech / Kavli Nanoscience Institute,
CALTECH, United States of America*

16:30

Conference closing



Poster session

P-EIBL	Electron and Ion Beam Lithography
P-ML/MK	Maskless Lithography / Mask Technology
P-BIO	Micro- and Nano- Systems for Biology
P-MST	Microsystems and their Fabrication
P-MDEV	Nanodevices
P-NIL	Nanoimprint Lithography
P-NSC	Nanoscale Engineering and Fabrication
P-PAT	Pattern Transfer
P-PHO	Photon Lithography
P-DIAG	Process Diagnosis and Control
P-RES	Resist and Resist Processing
P-RF	RF-MEMS/NEMS

Poster session

Monday 24th September

16:00-17:00 Poster Session I

17:00-18:00 Poster Session II

Electron and Ion Beam Lithography

- P-EIBL-1 **Surface chemistry and bio-functionalization of FIB and EBL defined structures studied by X-ray photo emission and mirror electron microscopy**
Anders Mikkelsen, Sara Ghatnekar-Nilsson, A. A. Zhakarov, Emelie Hilner, Lars Montelius, Jesper Andersen, *Lund University, LUND, Sweden*
- P-EIBL-2 **Directed electroless deposition of sub 50 nm interconnects on e-beam patterned self-assembled-monolayers**
Nick Fishelson, Liron Marom, Alexander Tsukernik, Alexandra Inberg, Yosi Shacham-Diamand, *Tel-Aviv University, TEL-AVIV, Israel*
- P-EIBL-3 **Lamellar grating used as the splitter grating in the Soft X-ray laser Mach-Zehnder interferometer**
Xin Tan, *ANHUI HEFEI, China*
- P-EIBL-4 **Electron beam lithography of HSQ/PMMA bilayer resists for negative tone lift-off process**
Haifang Yang¹, Aizi Jin², Qaing Luo², Junjie Li², Changzhi Gu², Zheng Cui³, *BEIJING, China*,
²*Institute of Physics, BEIJING, China*,
³*Rutherford Appleton Laboratory, CHILTON, United Kingdom*
- P-EIBL-5 **The Influence of Atomic Hydrogen on Focused Ion Beam induced Tungsten Deposition**
Andreas Steiger-Thirsfeld, Alois Lugstein, Emmerich Bertagnolli, *Vienna University of Technology, VIENNA, Austria*
- P-EIBL-6 **Patterning of Si substrates for controlled epitaxial Ge/Si(100) island deposition**
Monica Bollani¹, Roman Sordan², Giovanni Isella², Davide Colombo³, Johann Osmond²,

Hans Von Känel²,
¹*CNISM-CNR, COMO, Italy,*
²*L-NESS Politecnico of Milano, COMO, Italy,*
³*Universita' Milano Bicocca, MILANO, Italy*

- P-EIBL-7 **Microfabricated SERS-Arrays with sharp-edged metallic nanostructures**
 Uwe Huebner¹, Richard Boucher¹, Henrik Schneidewind¹, Dana Cialla², Juergen Popp¹,
¹*Institute of Photonic Technology (IPHT), JENA, Germany,*
²*Institute of Physical Chemistry, JENA, Germany*
- P-EIBL-8 **Periodic Sub-wavelength Electron Beam Lithography Defined Photonic Crystals for Mode Control in Semiconductor Lasers**
 Guy Derosé, Lin Zhu, Joyce Poon, Amnon Yariv, Axel Scherer,
California Institute of Technology, PASADENA, CALIFORNIA, United States of America
- P-EIBL-9 **E-beam lithography of catalyst patterns for carbon nanotube growth on insulating substrates**
 Michael Häffner, Monika Fleischer, Dieter Paul Kern,
Institute of Applied Physics, TÜBINGEN, Germany
- P-EIBL-10 **Determination of best focus and optimum dose for variable shaped beam systems by applying the isofocal dose method**
 Katja Keil,
Fraunhofer CNT, DRESDEN, Germany
- P-EIBL-11 **Progress Update Towards Fabricating EUVL Mask Blanks**
 Rajul Randive,
Veeco Instruments, ALBANY, United States of America
- P-EIBL-12 **Hybrid EB-writing technique with 100 kV-SB and 50 kV-VSB writers: use of the former for outlines and the latter for bodies after pattern data splitting**
 Hiroshi Fujita, Mikio Ishikawa, Masashi Sakaki, Naoko Kuwahara, Tadahiko Takikawa, Hisatake Sano, Morihisa Hoga, Naoya Hayashi,
Dai Nippon Printing Co., Ltd., KASHIWA-SHI, CHIBA-KEN, Japan

- P-EIBL-13 **Sub-40nm Ebeam / DUV Hybrid Lithography for Advanced Interconnections**
 Angélique Rasclé, Thibaut David,
CEA-LETI / MINATEC, GRENOBLE, France
- P-EIBL-14 **New approach of nano-patterning for localized semiconductor nanostructures**
 Luc Le Gratiet¹, Noelle Gogneau¹, Edmond Cambril¹, Anthony Martinez¹, Abderrahim Ramdane¹, Jérôme Martin², Wui Goh³, Abdallah Ougazzaden³, Isabelle Sagnes¹,
¹*LPN-UPR20 CNRS, MARCOUSSIS, France,*
²*LMOP UMR CNRS 7132, METZ, France,*
³*Georgia Institute of Technology, METZ, France*
- P-EIBL-15 **Ion- and electron-beam induced deposition of Pt, W, and Co: composition and electrical transport properties**
 Jose Maria De Teresa¹, Amalio Fernández-Pacheco², Rosa Córdoba², Oscar Montero², Ricardo Ibarra²,
¹*CSIC, ZARAGOZA, Spain,*
²*University of Zaragoza, ZARAGOZA, Spain*
- P-EIBL-16 **Improvements to the alignment process in a commercial vector scan electron beam lithography tool**
 Kevin Docherty, Stephen Thoms, Phil Dobson, John Weaver,
University of Glasgow, GLASGOW, United Kingdom
- P-EIBL-17 **Towards 2-10 nm electron-beam lithography: a quantitative approach**
 Vadim Sidorkin, Arnold Van Run, Anja Van Langen-Suurling, Emile Van der Drift,
Delft University of Technology, DELFT, The Netherlands
- P-EIBL-18 **High resolution electron beam lithography of PMGI using solvent developer**
 Bo Cui, Shiyong Zhao, Teodor Veres,
IMI -- National Research Council, BOUCHERVILLE, QC, Canada
- P-EIBL-19 **Improved electrical insulation of FIB-patterned nanogap electrodes by Iodine and HF chemical assistance**
 Gian Carlo Gazzadi, Elena Angeli, Stefano Frabboni, Paolo Facci,
CNR - INFM S3, MODENA, Italy

- P-EIBL-20 **TFT-LCD Panel Tester Using Low Voltage Microcolumns**
 Ho Seob Kim¹, D. W. Kim¹, Y. C. Kim¹, S. J. Ahn¹, S. S. Park²,
 K. W. Park², N. W. Hwang², S. W. Jin²,
¹*Sun Moon University, ASAN CITY, South-Korea*,
²*CEBT Co., ASAN CITY, South-Korea*
- P-EIBL-21 **Improvement of high resolution lithography capabilities by using amorphous carbon hard masks**
 Sebastien Pauliac-Vaujour, Stefan Landis,
 Pierre Brianceau, Julien Chiaroni,
 Olivier Faynot,
CEA/LETI - Minattec, GRENOBLE, France
- P-EIBL-22 **LEEPL: The Potencial to Succeed Optical Lithography beyond 32nm/hp**
 Takao Utsumi,
Nanolith LLC, CHIYODA-KU, TOKYO, Japan
- P-EIBL-23 **ORCHID Aberration Measurement Tool for Corrected Lens Systems**
 Hans Koops¹, Sergey Babin², M. Machin², A. Martynov²,
¹*HaWiKo PSS, OBER-RAMSTADT, Germany*,
²*aBeamTechnologies, CASTRO VALLEY CA, United States of America*,

Maskless Lithography / Mask Technology

- P-ML/MK-1 **Control of duty ratio in waveguide gratings using a Near-Field Holographic lithography system with a variable aperture**
 Jun-Ho Sung,
Inha University, INCHON, South-Korea
- P-ML/MK-2 **Application of TiO₂ film as the capping layer to extend the life time of Mo/Si multi-layer mirror of a extreme ultra violet (EUV) mask**
 J.Y. Lee¹, S.M. Heo¹, J.T. Lim²,
¹*Samsung Electronics, YONGIN, South-Korea*,
²*Sungkyunkwan University, YONGIN, South-Korea*
- P-ML/MK-3 **Optical proximity correction in SLM-based maskless lithography**
 Xiaowei Guo¹, Jinglei Du², Chunlei Du³,
¹*CHENGDU, China*,
²*Sichuan university, CHENGDU, China*,
³*CAS, CHENGDU, China*

- P-ML/MK-4 **Maskless Interference Lithography Based on SPP and Waveguide Technology**
Liang Fang¹, Jinglei Du¹, Fuhua Gao¹,
Xiangang Luo², Chunlei Du²,
Yongkang Guo¹,
¹*Sichuan University, CHENGDU, China,*
²*Institute of Optics and Electronics, CAS, CHENGDU, China*
- P-ML/MK-5 **Inverse problem of ion etching for CHARPAN tool**
Elmar Platzgummer¹, Hans Loeschner²,
Stephan Edel-Kapl¹,
Alexander Svintsov³, Sergey Zaitsev³,
¹*IMS nanofabrication GmbH, VIENNA, Austria,*
²*IMS Nanofabrication, VIENNA, Austria,*
³*IMT RAS, CHERNOGOLOVKA, MOSC. DISTR., Russia*
- P-ML/MK-6 **Approaches to Nanopatterning Using Heated AFM Cantilever Probes**
Clifford Henderson¹, Yueming Hua¹, William P. King²,
¹*Georgia Institute of Technology, ATLANTA, United States of America,*
²*University of Illinois, URBANA, IL 61801, United States of America*
- P-ML/MK-7 **3-dimensional Projection Mask-Less Patterning (PMLP) of microlenses and cones: modelling and monitoring of ion multi-beam kinetic sputtering in GaAs**
Falco Van Delft¹, Emile Naburgh¹, Elmar Platzgummer², Hans Loeschner²,
¹*Philips Research Europe, EINDHOVEN, The Netherlands,*
²*IMS Nanofabrication, VIENNA, Austria*
- P-ML/MK-8 **Secondary Electron Detection for Distributed Axis Electron Beam Systems**
Sayaka Tanimoto¹, Daniel Pickard², Chris Kenney³, Fabian Pease³,
¹*Hitachi, Ltd., KOKUBUNJI, Japan,*
²*National University of Singapore, SINGAPORE, Singapore,*
³*Stanford University, STANFORD, United States of America*
- Micro- and Nano- Systems for Biology**
- P-BIO-1 **Piezoresistive sensitivity of MEMS-based liquid dispensing system with built-in force sensors**
Maryna Lishchynska¹, Thierry Leichle², Liviu Nicu²,

- P-BIO-2 **Morphology of Nanoparticle-Derived Nanostructures and Its Effect on Cytotoxicity**
Fu-Hsiang Ko,
National Chiao Tung University, HSINCHU, Taiwan
- P-BIO-3 **Development of On-chip Metal-semiconductor-metal Photodetectors for the Characterization of On-chip Transesterification Reaction**
Fu-Hsiang Ko,
National Chiao Tung University, HSINCHU, Taiwan
- P-BIO-4 **Micro and nano structured roughness of PDMS substrates of Super-Hydrophobic Surfaces**
Barbara Cortese, MM Manca, V I Viola, D S D'amone, G Gigli,
University of Lecce, LECCE, Italy
- P-BIO-5 **A microfluidic cellular 'Iron Maiden'**
Kris Seunarine,
University of Glasgow, GLASGOW, United Kingdom
- P-BIO-6 **APEX protocol implementation on a Lab-on-a-Chip for SNPs detection**
Simone Luigi Marasso,
Politecnico di Torino, TORINO, Italy
- P-BIO-7 **Development of a 'microfluidic wheastone bridge' device for electrokinetic investigations using optimized Glass-PDMS-Glass technology**
Adrien Plecis, Yong Chen,
CNRS, MARCOUSSIS, France
- P-BIO-8 **Measuring more than mass: Effect of elastic properties of adsorbed bilayers on nanomechanical sensors**
Daniel Ramos, Montserrat Calleja, Johann Mertens, Javier Tamayo,
IMM-CNM-CSIC, MADRID, Spain
- P-BIO-9 **Micro-Contact Printing of oligonucleotides for biochip fabrication: the role of Poly(dimethylsiloxane) contamination**
Christophe Thibault¹, Child  rick S  verac¹,
V  ronique Le Berre², Emmanuelle Tr  visiol²,
Fran  ois Jean-Marie², Christophe Vieu¹,
¹*LAAS-CNRS, TOULOUSE, France,*
²*LBB, CNRS-INSA, TOULOUSE, France*

- P-BIO-10 **Microfluidic devices for optical determination of ethanol concentration**
Yong Chen¹, L Lei¹, I.L Mattos²,
¹Ecole Normale Supérieure, PARIS, France,
²Universidade Federal de Pernambuco, RECIFE, Brazil
- P-BIO-11 **Polyimide microcantilever surface stress biosensors using low cost, rapidly interchangeable springloaded micro-probe connections**
Robert Ibbotson,
Rutherford Appleton Laboratory, CHILTON, DIDCOT, United Kingdom
- P-BIO-13 **Bead-based protein microarrays realized through electrostatic self-assembly of carboxylated beads**
Venkataragavalu Sivagnanam, A. Sayah, Martin Gijs,
Ecole Polytechnique Fédérale de Lausanne, LAUSANNE, Switzerland
- P-BIO-14 **Comparison of Several Methods for Chemical Modification and Micropatterning of the SU-8 Photoresist**
Gabriela Blagoi, Stephan Keller, Martin Dufva, Anja Boisen, Mogens Havsteen Jakobsen,
DTU, LYNGBY, Denmark
- P-BIO-15 **Genotyping Single Nucleotide Polymorphisms based on Pinched Flow Fractionation Devices**
Asger Vig Larsen¹, Lena Poulsen¹, Henrik Birgens², Martin Dufva³, Anders Kristensen¹,
¹DTU – Technical University of Denmark, LYNGBY, Denmark,
²Department of Haematology, HERLEV, Denmark,
³Department of Micro and Nanotechnology, LYNGBY, Denmark
- P-BIO-16 **Determination of Particle Distributions in Microfluidic Systems under the Influence of Electric Fields**
Andreas Heeren, Monika Fleischer, Dieter P. Kern,
University of Tuebingen, TUEBINGEN, Germany
- P-BIO-17 **True Label-Free Detection from a Designed Array of Cantilevers**
Sara Ghatnekar-Nilsson¹, Jeremy Graham², Robert Hull², Lars Montelius¹,
¹Lund University, LUND, Sweden,
²University of Virginia, CHARLOTTESVILLE, VA, United States of America

- P-BIO-18 **Fabrication of nano-gold island with m-spacing using 2.5 dimensional PDMS stamps**
Wolfgang Schwinger¹, Elisabeth Lausecker¹, Iris Bergmair¹, Martyna Grydlik², Thomas Fromherz², Christine Hasenfuß², Rainer Schöftner¹,
¹Profactor GmbH, STEYR-GLEINK, Austria,
²Johannes Kepler University, LINZ, Austria
- P-BIO-19 **Nanostructured substrates for high density protein arrays**
Celestino Padeste¹, Frank Zoller¹, Yasin Ekinici², Harun Solak¹, Andreas Engel³,
¹Paul Scherrer Institut, VILLIGEN, PSI, Switzerland,
²ETH, ZÜRICH, Switzerland,
³University of Basel, BASEL, Switzerland
- P-BIO-20 **Nanostructured (bio)-functional polymer brushes by EUV-radiation induced polymer grafting**
Celestino Padeste, Patrick Farquet, Harun Solak,
Paul Scherrer Institut, VILLIGEN, PSI, Switzerland
- P-BIO-21 **A multiwell micromechanical cantilever array reader for biotechnology**
Renhua Zhang¹, Suman Cherian², Robert Cain³, S. Lorenzoni²,
Andreas Best¹, E. Macis², Roberto Raiteri², Ruediger Berger¹,
¹Max Planck Institute for Polymer Research, MAINZ, Germany,
²University of Genova, GENOVA, Italy,
³Protiveris Inc, ROCKVILLE, United States of America
- P-BIO-22 **Integrated-Fiber-Probe for Optical 3D Trapping and Manipulation**
Carlo Liberale,
, CATANZARO, Italy
- P-BIO-23 **Development of atto-vial based antibody arrays**
Sara Ghatnekar-Nilsson, Peter Ellmark, Christer Wingren, Linda Dexlin, Lars Montelius, Carl Borrebaeck,
Lund University, LUND, Sweden
- P-BIO-24 **Integration of sub-5 nm nanopores for electrical biological macromolecule translocation detection : A New Way**
Jacques Gierak¹, Ali Madouri¹, Anne Laure Biance², Loïc Auvray³,
¹LPN-CNRS, MARCOUSSIS, France,

²*Université Marne la Vallée, MARNE LA VALLEE, France,*

³*Université d'Evry, EVRY, France*

- P-BIO-25 **Manipulation of amyloid peptide nanowires using dielectrophoresis and microfluidics**
Castillo Jaime¹, Giorgio Prosperi², Maria Dimaki¹, Manolis Kasotakis³, Lihi Adler-Abramovich⁴, Anna Mitraki³, Ehud Gazit⁴, Winnie Svendsen¹,
¹*Technical University of Denmark, LYNGBY, Denmark,*
²*Politecnico University of Turin, TURIN, Italy,*
³*University of Crete, HERAKLION, Greece,*
⁴*University of Tel-Aviv, TEL-AVIV, Israel*
- P-BIO-26 **Modelling and Optical Measurement Verification of Novel Simplified Microreactors for Dilution Gradient Generation**
Abdulla Yusuf Hayat¹, R.W. Barber², P.R Fielden¹, N.J. Goddard¹, B.J. Treves Brown¹,
¹*University of Manchester, MANCHESTER, United Kingdom,*
²*STFC Daresbury Laboratory, WARRINGTON, United Kingdom*
- P-BIO-27 **BIOXTAS – an automated microfluidic chip for studies of biological macromolecules**
Detlef Snakenborg¹, Katrine N. Toft², Søren S. Nielsen¹, Mads G. Jeppesen², Lise Arleth², Jes K. Jacobsen³, Bente Vestergaard², Jörg P. Kutter¹,
¹*Technical University of Denmark, KGS. LYNGBY, Denmark,*
²*University of Copenhagen, COPENHAGEN, Denmark,*
³*Novo Nordisk, MÅLØV, Denmark*
- P-BIO-28 **Fabrication of hybrid 3D stamp for producing polymer biochips by nanoimprint lithography**
Lasse Højlund Thamdru¹, Fredrik Persson¹, Anna Klukowska², Anders Kristensen¹,
¹*Technical University of Denmark (DTU), KONGENS LYNGBY, Denmark,*
²*Micro resist technology GmbH, BERLIN, Germany*
- P-BIO-29 **A Microfluidic Chip for Sorting of Chromosomes**
Casper Hyttel Clausen,
, KGS. LYNGBY, Denmark

- P-BIO-30 **Femto mole (fmol) myoglobin Raman detection from plasmonic nanostructures**
Gobind DAS¹, G. DAS¹, F. Mecarini¹, M. Prascuiolu², F. De Angelis¹, C. Liberale¹, E. Di Fabrizio¹,
, CATANZARO, Italy,
²INFM-TASC-S.S. 14 km 163,5 in SciencePark, TRIESTE, Italy
- P-BIO-31 **Manufacturing substrate nano-grooves for studying cell alignment and adhesion**
Falco Van Delft¹, Eric van den Heuvel¹, Walter Loesberg², J. te Riet², P. Schon², C.G. Figdor², S. Speller², J.J.W.A. van Loon³, Frank Walboomers², John Jansen²,
¹Philips Research Europe, EINDHOVEN, The Netherlands,
²Radboud University, NIJMEGEN, The Netherlands,
³DESC OCB-ACTA – UvA and VU, AMSTERDAM, The Netherlands
- P-BIO-32 **Thermo-resistance based micro-calorimeter for continuous chemical enthalpy measurements**
Guilhem Velve Casquillas¹, M Le berre², F Bertholle¹, S Meance¹, L Malaquin¹, Y Chen¹,
¹CNRS LPN, MARCOUSSIS, France,
²ENS, PARIS, France
- P-BIO-33 **Multireflection based on chip label free molecules detection**
Laurent Billot,
LPN, MARCOUSSIS, France
- P-BIO-34 **Cell Proliferation Assay on Plasma Activated SU-8**
Marc Hennemeyer¹, Sandra Kerstan², Katrin Schürzinger²,
Ferdinand Walther¹, Alexander M. Gigler¹, Robert W. Stark¹,
¹University of Munich – L M U, MUNICH, Germany,
²German Heart Centre, TU Munich, MUNICH, Germany
- P-BIO-35 **Integration of microfluidics on Surface Acoustic Wave biosensors for multi-sensing purposes**
Konstantinos Mitsakakis¹, Angeliki Tserepi², Marilena Vlahopoulou², Electra Gizeli¹,
¹University of Crete, HERAKLION, CRETE, Greece,
²I.M.E.L., N.C.S.R.-‘Demokritos’, AG. PARASKEVI, ATHENS, Greece

- P-BIO-36 **Separation of white blood cells from a whole blood sample using pinched flow**
 Maria Dimaki, Fridolin Okkels, Nikolaj O. Christiansen, Martin G. Hansen, Simon Levinsen, Karsten B. Andersen, Pranjul Shah, Jaime Castillo, Casper H. Clausen, Jacob M. Lange, Linda B. Jensen, Winnie Svendsen,
Technical University of Denmark, KGS. LYNGBY, Denmark
- P-BIO-37 **The Physics of DNA in Nanochannels**
 Walter Reisner¹, Niels Larsen², Henrik Flyvbjerg², Jonas O. Tegenfeldt³, Anders Kristensen¹,
¹*Danish Technical University, LYNGBY, Denmark,*
²*RISØ National Laboratory, ROSKILDE, Denmark,*
³*Dept. of Physics, Lund University, LUND, Sweden*
- P-BIO-38 **Fabrication of Silicon dioxide nanochannel arrays without nanolithography for single DNA detection**
 Beomjoon Kim,
The University of Tokyo/IIS, TOKYO, Japan
- P-BIO-39 **Nano-interdigitated electrodes for detection of dopamine**
 Lars Henrik Dæhli Skjolding¹, Christer Spegel¹, Jenny Emneus², Lars Montelius¹,
¹*Lund University, LUND, Sweden,*
²*MIC-DTU, LYNGBY, Denmark*
- P-BIO-40 **Measurement of a gauge factor of a carbon fiber and its application to sensors**
 Jikwan Kim,
Chonnam national university, GWANGJU, South-Korea
- P-BIO-41 **Optimization of PDMS substrates for studying cellular adhesion and motility**
 David Fuard¹, Tzvetelina Tzvetkova-Chevolleau², Patrick Schiavone¹,
¹*CNRS – LTM [UMR 5129], c/o CEA-Grenoble, GRENOBLE CEDEX 9, France,*
²*TIMC-IMAG (UMR 5525), DynaCell group, FACULTÉ DE MÉDECINE – 38700 LA TRONCHE, France*
- P-BIO-42 **Step-and-Repeat Maskless Lithography for Ultra Large Scale DNA chips (ULS-**

DNA chips) for High Throughput Genomics

Omar Negrete,
CNTech, MADISON, United States of America

- P-BIO-43 **Surface Chemistry in Micro and Nanotechnology**
Mogens Havsteen Jakobsen¹, Gabriela Blagoi², Haukur Gudnason², Stephan Keller², Jacob Moresco Lange²,
¹*DTU – Technical University of Denmark, LYNGBY, Denmark,*
²*MIC-Department of Micro and Nanotechnology, LYNGBY, Denmark*
- P-BIO-44 **Standard bio-opto-fluidic chip technology using channel only process**
Franck Chollet, Lai-Fun Ho,
Nanyang Technological University, SINGAPORE, Singapore
- P-BIO-45 **Electrical Characterization of Cell Behaviour on Microelectrode**
Sungbo Cho,
Fraunhofer IBMT, ST. INGBERT, Germany

Microsystems and their Fabrication

- P-MST-1 **Miniaturized PMMA ball-valve micropump with cylindrical electromagnetic actuator**
Meng Shen¹, Christophe Yamahata², Martinus Gijs¹,
¹*EPFL, LAUSANNE, Switzerland,*
²*University of Tokyo, TOKYO, Japan*
- P-MST-2 **A simple and efficient method for reducing surface roughness of polymer microstructures**
Monica Brivio¹, Gerardo Perozziello¹, Giuseppina Simone², Anders Wolff¹,
¹*Technical University of Denmark (DTU), LYNGBY, Denmark,*
²*University of Rome, „Tor Vergata“, ROME, Italy*
- P-MST-3 **Performance prediction of polysilicon electrothermal microactuators using geometrical variation analysis**
Mahnaz Shamshirsaz¹, Mohsen Gheisarieha², Mohammad Maroufi¹,
¹*Amirkabir University of Technology, TEHRAN, Iran,*
²*Sharif university of Technology, TEHRAN, Iran*

- P-MST-4 **Optical lithography onto inside surfaces of small-diameter pipes**
Toshiyuki Horiuchi, Masahiro Katayama,
Yuusuke Watanabe, Katsuyuki Fujita, Takashi
Yasuda,
Tokyo Denki University, TOKYO, Japan
- P-MST-5 **Theoretical and Experimental Investigation on the Capturing Behaviour of a Novel Microfluidic Magnetic Bead Separator for High-Throughput Applications**
Minqiang Bu,
*Technical University of Denmark, KGS.
LYNGBY, Denmark*
- P-MST-6 **Direct Al-Al contact using low temperature wafer bonding for integrating MEMS and CMOS devices**
Huamao Lin,
*The University of Edinburgh, EDINBURGH,
United Kingdom*
- P-MST-7 **Influence of Manufacturing Irregularities on a 3-D MEMS Gyroscope**
Stefan Blunier, Jürg Dual,
ETH Zurich, ZURICH, Switzerland
- P-MST-8 **Patterned thin metal films on a Si photonic crystal for efficient IR emission**
Nikos Papanikolaou, Ioannis Raptis,
Institute of Microelectronics, ATHENS, Greece
- P-MST-9 **Fabrication of Optical Grayscale Masks for Tapered Microfluidic Devices**
Volker Nock¹, Richard Blaikie¹, Tim David²,
¹*MacDiarmid Institute, CHRISTCHURCH, New Zealand,*
²*Centre for Bioengineering, CHRISTCHURCH,
New Zealand*
- P-MST-10 **Design, Fabrication, and Analysis of Microporous Wicking Structure**
Lawrence Melvin¹, Mark Weislogel², Yongkang
Chen², Ryan Jenson²,
Scott Dhuey³, Paul Nealey³,
¹*Synopsys, HILLSBORO, United States of America,*
²*Portland State University, PORTLAND, United States of America,*
³*University of Wisconsin, MADISON, United States of America*
- P-MST-11 **Fabrication of HF Bulk Acoustic Silicon Disk Resonator for Liquid Operation**
Jan Hales, Zachary Davis, Meng Tang, Anja
Boisen,

- P-MST-12 **Investigation of Electroosmotic Flow of Polymer Microfluidic Devices**
Ingrid Hoek¹, Febly Tho¹, W. Mike Arnold²,
¹*Industrial Research Limited, LOWER HUTT, New Zealand,*
²*MacDiarmid Institute Victoria University, WELLINGTON, New Zealand*
- P-MST-13 **Development of Rapid Mask Fabrication Technology for Micro-abrasive Jet Machining**
Seungpyo Lee¹, In Hwan Lee¹, Tae Jo Ko², Hyun-Wook Kang³, Dong-Woo Cho³,
¹*Chungbuk National Univ., CHEONGJU, South-Korea,*
²*Yeungnam Univ., KYUNGSAN, South-Korea,*
³*POSTECH, POHANG, South-Korea*
- P-MST-14 **MEMS Mirrors for the use in Resonant Cavity Enhanced Detectors**
Niels Quack, Stefan Blunier, Jurg Dual, Martin Arnold, Ferdinand Felder, Christian Ebnetter, Mohamed Rahim, Hans Zogg,
ETH Zurich, ZURICH, Switzerland
- P-MST-15 **Reactive Ion Etching of Low-Loss Channel Waveguides in Al₂O₃ and Y₂O₃ Layers**
Feridun Ay, Jonathan Bradley, Kerstin Wörhoff, Markus Pollnau,
University of Twente, ENSCHEDE, The Netherlands
- P-MST-16 **A new type of a MEMS pressure sensor with mechanical micro-switch array**
Changsin Park, youngsu Choi, Dongweon Lee,
Chonnam National University, GWANG-JU, South-Korea
- P-MST-17 **Mechanical Properties of thin Si-based membrane windows deteriorated by electron beam penetration**
Masanori Yamaguchi¹, Yohei Yamada², Yoshiki Goto², Mitsuhiro Shikida³, Kazuo Sato¹, Jun Murase²,
¹*Nagoya University, NAGOYA, Japan,*
²*Ushio Inc., HIMEJI, Japan,*
³*Eco-Topia Science Institute, NAGOYA, Japan*
- P-MST-18 **Opto-thermal actuation in microcantilevers made of double polymer layer**

Cristina Martin¹, Andreu Llobera¹, Anja Voigt²,
 Gabi Gruetzner²,
 Gabriel Abadal³, Francesc Perez-Murano¹,
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²Microresist technology GmbH, BERLIN,
 Germany,
³UAB, BARCELONA, Spain

- P-MST-19 **Fabrication of miniaturized Schottky emitter by wire electrical discharge method (WEDM)**
 Anand Kumar Dokania, Marco Pelle, Pieter Kruit,
Delft University of Technology, DELFT, The Netherlands
- P-MST-20 **A Novel Pressure Sensor with a PDMS Diaphragm**
 Young Soo Choi,
Chonnam National University, GWANG JU, South-Korea
- P-MST-21 **In-situ fabrication of a poly-acrylamide membrane in a microfluidic channel**
 Jean-Baptiste Orhan, Ruben Knaack, Virendra Kumar Parashar,
 Martinus Gijs,
EPFL, LAUSANNE, Switzerland
- P-MST-22 **Gas Chromatographic micro-column using polydimethylsiloxane as structural and functional material**
 Antonia Malaenou, Maria-Elena Vlachopoulou, Roubini Triantafyllopoulou, Aggeliki Tserepi, Christos Tsamis, Stavros Chatzandroulis,
„NCSR, DEMOKRITOS, ATHENS, Greece
- P-MST-23 **Tailored fabrication of optical interconnection micro-lenses using micro ink-jetting technique**
 Hyun-Shik Lee¹, Shinmo An¹, Keum Soo Jeon², Insu Park², Seoung Gol Lee¹, Beom Hoan O¹, Se Geon Park¹, El Hang Lee¹,
¹Inha University, INCHEON, South-Korea,
²Doosan Corporation Electro-Materials BG, KYOUNGKI-DO, South-Korea
- P-MST-24 **Fabrication of mems bridge for explosive detection**
 Anders Greve¹, J. H. Hales¹, D. Yi², L. Senesac², T. Thundat², Anja Boisen¹,
¹Department of Micro and Nanotechnology, LYNGBY, Denmark,
²Oak Ridge National Laboratory, OAK RIDGE, United States of America

- P-MST-25 **Field-effect transistors with thin ZnO as active layer for gas sensor applications**
 Filippou Farmakis¹, T. Speliotis¹, K.P. Alexandrou¹, C. Tsamis¹, M. Kompitsas², I. Fasaki², P. Jedrasic³, G. Petersson³, B. Nilsson³,
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³MC2, Chalmers University of Technology, GÖTEBORG, Sweden
- P-MST-26 **Stencil Lithography on Flexible Polymer Substrates**
 Katrin Sidler,
 EPFL, LAUSANNE, Switzerland
- P-MST-27 **Monolithic Silicon Optocoupler Engineering for Advanced Sensing Applications**
 Konstantinos Misiakos, Ioannis Raptis, Eleni Makarona, Maria Kitsara,
 NCSR 'Demokritos', AG. PARASKEVI, ATTIKIS, Greece
- P-MST-28 **Patterning on Non-planar Substrates by Combining Thermoforming and Nanoimprint Technologies**
 Jer-Haur Chang, Yuet-Ping Lee, Yung-Pin Chen, Lon Alex Wang,
 National Taiwan University, TAIPEI, Taiwan
- P-MST-29 **Diffraction supported creation of artificial ultra-hydrophobic micro and nano structures**
 Olaf Mertsch, Arne Schleunitz, Antje Walter, Ivo Rudolph, Daniel Schondelmaier, Bernd Loechel,
 BESSY GmbH, BERLIN, Germany
- P-MST-30 **Deep plasma etching as a mass production method for polymeric microfluidics fabrication**
 Nikolaos Vourdas, K. Kontakis, A. Tserepi, E. Gogolides,
 Institute of Microelectronics, ATHENS, Greece
- P-MST-31 **Real-time gripping detection for a mechanically actuated microgripper**
 Marius Blideran¹, Monika Fleischer¹, Francois Grauvogel², Karsten Löffler², Matthias Langer², Dieter Kern¹,
¹University of Tübingen, TÜBINGEN, Germany,
²University of Ulm, ULM, Germany
- P-MST-32 **Static contact micro four-point probes with <11 nm positioning repeatability**

Dirch Petersen¹, Ole Hansen¹, Torben Hansen¹, Peter Petersen²,
 Peter Bøggild¹,
¹*Technical University of Denmark, KGS. LYNGBY, Denmark,*
²*Capres A/S, KGS. LYNGBY, Denmark*

- P-MST-33 **Fabrication of SU 8 3000 microfluidic dielectrophoretic pump by low temperature adhesive bonding**
 Roman Holly, Miroslav Mikolasek, Wolfgang Hilber, Kurt Hingerl,
Johannes Kepler University, LINZ, Austria
- P-MST-34 **Crystalline silicon cantilevers for piezoresistive detection of biomolecular forces**
 Guillermo Villanueva¹, J.A. Plaza², J. Montserrat², F. Perez-Murano², J. Bausells²,
¹*Ecole Polytechnique Fédérale de Lausanne, LAUSANNE, Switzerland,*
²*CNM-IMB (CSIC), BELLATERRA, Spain*
- P-MST-35 **Tactile Pressure Sensors using Strained Carbon Nanotube Networks Formed on Pre-stretched Elastomer Substrates**
 Seung-Beck Lee,
Hanyang University, SEOUL, South-Korea
- P-MST-36 **A micromagnetoflowcell for microfluidic measurements**
 Philip Prewett,
University of Birmingham, BIRMINGHAM, United Kingdom
- P-MST-37 **Micromechanical Hz to MHz frequency up-converter integrated in a standard CMOS-0.35um technology for energy scavenging applications**
 Gabriel Abadal¹, Gabriel Abadal¹, Gonzalo Murillo¹, Jordi Teva¹, Francesc Torres¹, Joan Lluís López¹, Arantxa Uranga¹, Jaume Esteve², Francesc Pérez-Murano², Núria Barniol¹,
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- P-MST-38 **A novel design of a comb-drive actuator with large displacements**
 Dong-Weon Lee¹, Xing Chen², Jun Ding²,
GWANGJU, South-Korea,
²*Chonnam National University, GWANGJU, South-Korea*

- P-MST-39 **Optimization of a Novel Micro-Opto-X ray Imaging Lens**
Philip Prewett,
University of Birmingham, BIRMINGHAM, United Kingdom
- P-MST-40 **Revised Fabrication Process for Micro-Fluxgate-Magnetometers: Usage of Electrodepositable Photoresist**
Maren Ramona Kirchhoff, Jens Güttler, Andreas Waldschik, Marco Feldmann, Stephanus Büttgenbach,
TU Braunschweig, BRAUNSCHWEIG, Germany
- P-MST-41 **Silicon nitride micro/nano mechanical devices with integrated strain gauge readout**
Zachary Davis,
Technical University of Denmark, LYNGBY, Denmark
- P-MST-42 **Cantilever Pre-deflection Control of Massively Parallel Arrays**
Yanko Sarov,
Univ. of Kassel, KASSEL, Germany
- P-MST-43 **SPICE simulations of self-actuated piezoresistive cantilever arrays**
Andreas Frank¹, Teodor Gotszalk², Tzvetan Ivanov¹, Jens Zöllner¹, Ivo W. Rangelow¹, Michal Swiatkowski², Nikolay Nikolov³, Michael Zier⁴, Bernd Schmidt⁴,
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²*TU-Wroclaw, WROCLAW, Poland,*
³*Microsystems, VARNA, Bulgaria,*
⁴*FZR, DRESDEN, Germany*
- P-MST-44 **Fabrication of Magnetic Cantilevers using a Polymer Composite**
Stijn Van Pelt¹, Stephan Keller², Gabriela Blagoi², Anja Boisen², Mikkel Fougt Hansen²,
¹*Technical University of Eindhoven (TU/e), EINDHOVEN, The Netherlands,*
²*Technical University of Denmark, LYNGBY, Denmark*
- P-MST-46 **Nanostructured Oxides on Porous Silicon Microhotplates for NH3 Sensing**
Roubini Triantafyllopoulou¹, Xavi Illa², Olga Casals², Christos Tsamis¹, Albert Romano-Rodriguez², J.R. Morante²,
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- P-MST-47 **Fabrication and Characterization of Fully Polymeric Pressure Sensors Made from**

**the Intrinsically Conductive Polymer
PEDOT/PSS on Polyimide Membranes:
Preliminary Results**

Udo Lang, Philipp Rüst, Jurg Dual, Stefan
Blunier,
ETH Zurich, ZÜRICH, Switzerland

P-MST-48

**Poly 3,4-Ethylenedioxythiophene (PEDT)
Strain Gauge**

Ramona Mateiu¹, Michael Lillemose², Thomas
Hansen³, Oliver Gescke², Anja Boisen²,
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P-MST-49

**Electroosmotic characteristics of
polystyrene microchips - experiments
and modeling**

Michal Pribyl, Walter Schrott, Jakub
Stepanek, Dalimil Snita,
*Institute of Chemical Technology, Prague,
PRAHA, Czech Republic*

Nanodevices

P-NDEV-1

**Thermal conductivity measurements of
Low-k materials using thermorefectance
phenomenon**

Masashi Kuwahara¹, Osamu Suzuki², Syozo
Takada³, Nobuhiro Hata³, Paul Fons², Junji
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P-NDEV-2

**Nanocrystal Non-Volatile Memories:
Simulation, Fabrication and
Characteristics**

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Hu², Shibing Long², Rui Jia²,
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P-NDEV-3

**FABRICATION OF TERAHERTZ
METAMATERIALS BY LIFT-OFF OF
S1813/LOR STACK**

Haifang Yang¹, Xiaoxiang Xia², Yiming Sun²,
Li Wang², Changzhi Gu²,
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- P-NDEV-4 **Rectifying behavior of an individual Tin oxide nanowire**
 Changzhi Gu¹, Xiaoxiang Xia², Zongli Wang²,
 Junjie Li², Meimei Chen²,
BEIJING, China,
²*Institute of Physics, BEIJING, China*
- P-NDEV-5 **Large asymmetries of magnetoresistance loops in Co-line structures**
 C Christides¹, I Raptis²,
PATRAS, Greece,
²*Institute of Microelectronics, ATHENS, Greece*
- P-NDEV-6 **Development of a SPM compatible ion emitter capable of atomic imaging resolution**
 Jacques Gierak¹, David Martrou²,
¹*LPN-CNRS, MARCOUSSIS, France,*
²*CEMES-CNRS, TOULOUSE, France*
- P-NDEV-7 **Analysis of transient adsorption processes using micro/nanocantilever oscillators**
 Zoran Djuric, Ivana Jokic, Milos Frantlovic,
IHTM, BELGRADE, Serbia and Montenegro
- P-NDEV-8 **Fabrication of Superprism using Nanoimprinted 2-D Polymer Photonic Crystals**
 Choon-Gi Choi, Young-Tak Han, Sang Soon Oh,
ETRI, DAEJEON, South-Korea
- P-NDEV-9 **Evaluation of Electronic Charged States of Individual Si Quantum Dot with and without Ge Core**
 Yudi Darma¹, Seiichi Miyazaki²,
¹*Institut Teknologi Bandung, BANDUNG, Indonesia,*
²*Hiroshima Univ., HIGASHI HIROSHIMA, Japan*
- P-NDEV-10 **Measurement of the resonant frequency of nano-scale cantilevers by hard contact readout**
 Søren Dohn, Ole Hansen, Anja Boisen,
Technical University of Denmark, KGS. LYNGBY, Denmark
- P-NDEV-11 **Device Optimization: Asymmetric Poly-silicon and TiN Gate FinFETs**
 Hangeon Kim,
Inha Univ., INCHEON, South-Korea

- P-NDEV-12 **Nanoelectromechanical Device of Laterally Deflectable Cantilever Arrays**
Sara Ghatnekar-Nilsson¹, Gang Luo¹, Dan Hessman¹, Ivan Maximov¹, Adrian Kewell², Jan Krüger², Mariusz Graczyk¹, Hongqi Xu¹, Lars Montelius¹,
¹*Lund University, LUND, Sweden*,
²*BioSensia Ltd, CORK, Ireland*
- P-NDEV-13 **A Method for Increasing Surface Area between Titania and Various Polymers in Hybrid Photovoltaic Cell**
Hyun-Jung Her, Woon-Hyuk Baek, C. J. Kang, Yong-Sang Kim,
Myongji University, YONGIN, South-Korea
- P-NDEV-14 **Pressure sensitive MOEMS based on photonic crystal membranes**
Vito Errico¹, Andrea Locatelli², Daniele Modotto², Costantino De Angelis², Massimo De Vittorio¹,
¹*CNR/INFM-ISUFI-Università del salento, LECCE, Italy*,
²*Università degli studi di Brescia, BRESCIA, Italy*
- P-NDEV-15 **Focused ion beam fabrication and functionalization of CMOS integrated silicon nanocantilevers**
Xavier Borriase¹, Gemma Rius², Julien Arcamone², Jordi Llobet², Francesc Perez-Murano²,
¹*Institut de Microelectronica de Barcelon, BELLATERRA, BARCELONA, Spain*,
²*CNM-IMB, BELLATERRA, Spain*
- P-NDEV-16 **Modeling and fabrication of photonic crystal lenses designed with genetic algorithms**
J. Marques-Hueso, L. Sanchis, J. Martinez Pastor,
University of Valencia, VALENCIA, Spain
- P-NDEV-17 **Electron beam size determination based on an intelligent substrate**
Helmut Weigand¹, M. Fleischer², D.P. Kern²,
¹*University of Tuebingen, TUEBINGEN, Germany*,
²*University of Tuebingen / IAP, TUEBINGEN, Germany*
- P-NDEV-18 **Characterization at the nanometer scale of local electron beam irradiation of CNT based devices**
Gemma Rius,
IMB-CNM, BELLATERRA, Spain

- P-NDEV-19 **Nanoscale Floating-Gate Memory using Self-Assembled NiSi₂ Nanocrystals**
Seung-Beck Lee, Chang-Seung Woo,
Hanyang University, SEOUL, South-Korea
- P-NDEV-20 **Schottky barrier heights of ErSi_{1.7} Schottky diodes**
M. Jun¹, Y. Kim², C. Choi², T. Kim², S. Oh², M. Jang²,
, DAEJEON, South-Korea,
²*ETRI, DAEJEON, South-Korea*
- P-NDEV-21 **Label-Free On-Chip Electronic Detection of DNA-Hybridization on Nanoparticle Array**
Hiroshi Shiigi¹, Shiho Tokonami², Tsutomu Nagaoka¹, Masashi Iwamoto¹,
Yukiteru Nishide¹,
¹*Osaka Prefecture University, SAKAI, Japan,*
²*Hiroshima University, HIGASHI-HIROSHIMA, Japan*
- P-NDEV-22 **Plasmon confinement in V-groove waveguides fabricated by NanoImprint Lithography**
Irene Fernandez-Cuesta¹, Rasmus Bundgaard Nielsen², Alexandra Boltasseva³, Dominique Heinis⁴, Xavier Borrís¹, Niek Van Hulst⁴,
Francesc Perez-Murano¹, Anders Kristensen²,
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²*Department of Micro and Nanotechnology, LYNGBY, Denmark,*
³*Dep. of Communicat. Optics and Materials, LYNGBY, Denmark,*
⁴*Institut de Ciencies Fotoniques, CASTELDEFELLS, Spain*
- P-NDEV-23 **Design of a Tunable Photonic Band Gap Filter**
Borriboon Thubthimthong, Franck Chollet,
Nanyang Technological University, SINGAPORE, Singapore

Nanoimprint Lithography

- P-NIL-1 **Fabrication of Micro Mold for Hot-Embossing of Polyimide Microfluidic Platform By Using Electron Beam Lithography Combined With Ion Coupled Plasma**
Sung-Won Youn, Toshihiko Noguchi,
Masaharu Takahashi, Ryutaro Maeda,
National Institute of AIST, TSUKUBA, IBARAKI, Japan

- P-NIL-2 **Boron nitride stamp for ultra-violet nanoimprinting lithography fabricated by focused ion beam lithography**
Ali Ozhan Altun, Jun-Ho Jeong, Jong-Joo Rha, Ki-Don Kim, Eung-Sug Lee,
Korea Institute of Machinery and Mat., DAEJEON, South-Korea
- P-NIL-3 **Micro lens array imprinted on Pyrex glass by using amorphous Ni-P alloy mold**
Harutaka Mekaru¹, Tomoyuki Tsuchida², Jun-ichi Uegaki², Manabu Yasui³, Michiru Yamashita⁴, Masaharu Takahashi¹,
¹*AIST, TSUKUBA, IBARAKI, Japan,*
²*Elionix Inc., TOKYO, Japan,*
³*Kanagawa Industrial Technology Center, EBINA, Japan,*
⁴*Hyogo Prefectural Institute of Technology, MIKI, Japan*
- P-NIL-4 **Residual layer thickness in nanoimprint: experiments and coarse-grain simulation**
Vadim Sirotkin¹, N. Kehagias², V. Reboud², C.M. Sotomayor Torres², A. Svintsov¹, Sergey Zaitsev¹,
¹*IMT RAS, CHERNOGOLOVKA, Russia,*
²*Tyndall National Institute, University C, CORK, Ireland*
- P-NIL-5 **Polymers below the critical molecular weight for thermal imprint lithography**
Nicolas Bogdanski, Matthias Wissen, Saskia Moellenbeck, H.-C. Scheer,
University of Wuppertal, WUPPERTAL, Germany
- P-NIL-6 **Custom-specific UV nanoimprint templates and life time of antisticking layers**
Holger Schmitt¹, Martin Zeidler², Mathias Rommel², Heiner Ryssel¹,
¹*University Erlangen-Nuremberg, ERLANGEN, Germany,*
²*Fraunhofer IISB, ERLANGEN, Germany*
- P-NIL-7 **3-D nano-template fabrication by means of greyscale electron beam lithography**
Axel Rudzinski¹, Ulrich Barth¹, Michael Kahl¹, Björn-Andre Hühn², Stefan Kopetz², Maxim Fadel³, Andreas Neyer²,
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²*Arbeitsgebiet MST, Uni-Dortmund, DORTMUND, Germany,*
³*Lehrstuhl HFT, Uni-Dortmund, DORTMUND, Germany*

- P-NIL-8 **Low thermal shrinkage of nonimprinted glass pattern using Glasia as a precursor**
 Motoki Okinaka¹, Hiroshi Tsushima²,
 Toshiyuki Tachibana², Yoshifumi Ichinose²,
 Emi Watanabe², Keiichi Yanagisawa¹,
 Kazuhito Tsukagoshi¹, Yoshinobu Aoyagi³,
¹RIKEN, WAKO, Japan,
²Nippon Paint Co. LTD., OSAKA, Japan,
³Tokyo Institute of Technology, YOKOHAMA,
 Japan
- P-NIL-9 **Nanosilver particles-based conductive pattern fabrication using direct UV-imprint lithography**
 Soonwon Lee,
 Korea Institute of Machinery & Materials,
 DAE-JEON, South-Korea
- P-NIL-10 **Numerical Analysis of Polymer Flow during UV-NIL Process**
 Ki-don Kim,
 Korea Institute of Machinery and Material,
 DAE-JEON, South-Korea
- P-NIL-11 **Moire and Dual Grating Aligning Method in Nanoimprint Lithography**
 Geehong Kim,
 Korea Institute of Machinery and Material,
 DAEJEON, South-Korea
- P-NIL-12 **Simplified Nanoimprint Lithography process towards Protein Patterning**
 Santos Merino, Aritz Retolaza, Pedro Heredia,
 Celia Morales, Juan Antonio Alduncin, David
 Mecerreyes,
 Fundación Tekniker, EIBAR, Spain
- P-NIL-13 **Analysis of Time Dependent Polymer Deformation based on a Viscoelastic Model in Thermal Imprint Process**
 Hideki Takagi¹, Masaharu Takahashi¹,
 Ryutaro Maeda¹, Yuki Onishi², Yasuroh Iriye²,
 Takuya Iwasaki², Yoshihiko Hirai³,
¹AIST, TSUKUBA, IBARAKI,, Japan,
²Mizuho Information and Research Institut,
 TOKYO, Japan,
³Osaka Prefecture University, SAKAI, OSAKA,
 Japan
- P-NIL-14 **High quality patterns produced by nanoimprint lithography and inductive coupled plasma etching**
 Brian Bilenberg¹, Colin Welch²,
¹NIL Technology, KONGENS LYNGBY,
 Denmark,
²Oxford Instruments Plasma Technology,
 BRISTOL, United Kingdom

- P-NIL-15 **Nanofluidic device fabricated by nanoimprint lithography for DNA stretching applications**
 Estefania Abad, Santos Merino, Aritz Retolaza, Aritz Juarros,
Fundacion Tekniker, EIBAR, Spain
- P-NIL-16 **A novel hydrostatic pressuring mechanism for soft UV-imprinting process**
 Fang-Sung Cheng,
TAIPEI, Taiwan
- P-NIL-17 **NanoImprint of inorganic sol-gel materials : rheological properties and 3D patterning**
 Christophe Peroz, Vanessa Chauveau, Etienne Barthel, Elin Sondergard,
Joint Lab. CNRS/Saint-Gobain, AUBERVILLIERS, France
- P-NIL-18 **Molecular dynamics study on deformation of polycrystalline Si mold in nanoimprint**
 Masaaki Yasuda, Shuhei Horimoto, Kazuhiro Tada, Yoshihisa Kimoto, Hiroaki Kawata, Yoshihiko Hirai,
Osaka Prefecture University, OSAKA, Japan
- P-NIL-19 **Nano-scale Patterning using the Roll Typed UV-Nanoimprint Lithography**
 Soo Yeon Park, SeungWoo Lee, ShinHo Kim, JaeJong Lee,
KIMM, DAEJEON, South-Korea
- P-NIL-20 **Equalising stamp and substrate deformations in solid parallel-plate UV-based nanoimprint lithography**
 Iris Bergmair¹, Michael Mühlberger¹, Markus Gusenbauer¹, Rainer Schöftner¹, Kurt Hingerl²,
¹*Profactor, STEYR-GLEINK, Austria,*
²*Christian Doppler Laboratory, LINZ, Austria*
- P-NIL-21 **Mold deformation in Nanoimprint Lithography**
 Santos Merino¹, Aritz Juarros¹, Aritz Retolaza¹, Helmut Schiff², Sergey Zaitsev³,
¹*Fundación Tekniker, EIBAR, Spain,*
²*Paul Scherrer Institute, VILLIGEN, Switzerland,*
³*Institute of Microelectronics Technology, CHERNOGOLOVKA, Russia*
- P-NIL-22 **Wafer scale fabrication of Ormocer dye lasers by combined nanoimprint and photolithography**

- Mads Brøkner Christiansen¹, Ateeq Nasir¹,
Gideon Peter Caringal¹, Anna Klukowska²,
Anders Kristensen¹,
¹*Technical University of Denmark (DTU),
LYNGBY, Denmark,* ²*Micro resist technology
gmbH, BERLIN, Germany*
- P-NIL-23 **Influence of PEB in inorganic positive EB resist**
Jun Taniguchi¹, Miyako Sizuno¹, Kenta
Ogino¹, Kiyoshi Ishikawa²,
¹*Tokyo University of Science, NODA CHIBA,
Japan,* ²*TOKYO OHKA KOGYO CO., LTD., 1590
TABATA, SAMUKAWA, KOZA, KANAGAWA,
Japan*
- P-NIL-24 **Measurement of demolding forces in full wafer thermal nanoimprint**
Vera Trabadelo¹, Helmut Schiff¹, Santos
Merino², Sandro Bellini³,
Jens Gobrecht¹,
¹*Paul Scherrer Institut, VILLIGEN PSI,
Switzerland,* ²*Fundacion Tekniker, EIBAR, Spain,*
³*University of Applied Sciences, WINDISCH,
Switzerland*
- P-NIL-25 **Direct Fabrication of Rigid Microstructures on Metal Rollers Using Dry Film Resist**
Liang-Ting Jiang¹, Tzu-Chien Huang², Chien-
Ren Chiou², Sen-Yeu Yang²,
TAIPEI, Taiwan,
²*National Taiwan University, TAIPEI, Taiwan*
- P-NIL-26 **Full process development for high resolution NIL stamp replication**
Stefan Landis¹, N Chaix², C Gourgon², C
Perret²,
GRENOBLE, France,
²*CNRS-LTM, GRENOBLE, France*
- P-NIL-28 **Analysis of the filling behaviour of trenches via air bubble tracking**
Saskia Möllenbeck¹, M Wissen¹, N Bogdanski¹,
HC Scheer¹, J Zjadacz², K Zimmer²,
¹*University of Wuppertal, WUPPERTAL,
Germany,* ²*Institute of Surface Modification, LEIPZIG,
Germany*
- P-NIL-29 **Fabrication of three dimensional metal films with extraordinary transmission by reversal imprint lithography**
Hsuen-Li Chen¹, S. Y. Chuang¹, S. S. Kuo¹, C.
H. Lin²,
¹*National Taiwan University, TAIPEI, Taiwan,*

²*National Nano Device Lab., HSINCHU, Taiwan*

- P-NIL-30 **Fabrication of free-standing SU-8 subwavelength grating by UV curing imprint**
Xudi Wang¹, Yanlin Liao², Liangjin Ge³, Shaojun Fu³, Yifang Chen⁴, Zheng Cui⁴,
, HEFEI, China,
²*Anhui University, HEFEI, China,*
³*University of Science and Technology of, HEFEI, China,*
⁴*Rutherford Appleton Laboratory, OXFORDSHIRE, United Kingdom*
- P-NIL-31 **A nanoimprint lithography for fabricating SU-8 gratings for near-infrared to deep-UV application**
Shengqi Xie¹, Ran Liu¹, Xinping Qu¹, Yifang Chen²,
¹*Fudan University, SHANGHAI, China,*
²*Rutherford Appleton Laboratory, OXON, United Kingdom*
- P-NIL-32 **Fabrication of Nanoimprint Stamps for Rainbow Holograms using SEM based E-Beam Lithography**
Arne Schleunitz¹, Alexander Firsov¹, Alexander Mai¹, A. Svintsov², S. Zaitsev²,
¹*BESSY GmbH, BERLIN, Germany,*
²*Intitute of Microelectronics Technology, CHERNOGOLOVKA, Russia*
- P-NIL-33 **Fabrication of nano-hole array patterns on transparent conducting oxide layer using thermally curable nanoimprint lithography**
Kyeong Jae Byeon, Seon Yong Hwang, Heon Lee,
Korea university, SEOUL, South-Korea
- P-NIL-34 **Comparison of step and repeat method of thermal and UV-imprinting using a commercial nanoimprint stepper**
Tomi Haatainen, Päivi Majander, Tapio Mäkelä, Jouni Ahopelto,
VTT, VTT, Finland
- P-NIL-35 **Fabrication of Microlens Array Using Soft-Roller Embossing with Gas-pressurized Platform**
Sen-Yeu Yang, Fang-Sung Cheng, Po-Hsun Huang, Shu-Wen Xu,
National Taiwan University, TAIPEI, Taiwan

- P-NIL-36 **Fabrication of 100 nm sized nano-patterns using water-soluble PVA template as an imprinting stamp**
Kang-Soo Han, Sung-Hoon Hong, Heon Lee,
Korea University, SEOUL, South-Korea
- P-NIL-37 **Nanophotonic crystals with chiral elements by a hot embossing process in SU-8**
Bing-Rui Lu,
Fudan University, SHANGHAI, China
- P-NIL-38 **Fabrication of Multi-layer Imprinting Master using Adaptive Two Step photolithography**
Han-Hyoung Kim, Seung-Kook Yang, Han-Suk Yoo, Seung-Yong Lee, Dong-Hoon Chang, Seung-Gol Lee, Beom-Hoan O, El-Hang Lee, Se-Geun Park,
Inha university, INCHEON, South-Korea
- P-NIL-39 **Realization of silicon masters by electron-beam lithography for room temperature nanoimprint lithography on conjugated polymers**
Ripalta Stabile, Elisa Mele, Pompilio Del Carro, Luana Persano,
Andrea Camposeo, Roberto Cingolani, Dario Pisignano,
CNR-INFM ISUFI, LECCE, Italy
- P-NIL-40 **Fabrication of patterned 3-D nickel components with electroforming and Step and Flash Imprint lithography**
Jeff Kettle, Kettle Jeff, Lalev Georgi, Dimov Stefan, Ivanov Atanas, Brosseau Emmanuel, Hoyle Robert,
Manufacturing Engineering Centre (MEC), CARDIFF, United Kingdom
- P-NIL-41 **Development of functional imprint material for the Step and Flash Imprint Lithography process**
Jeff Kettle¹, Kettle Jeff¹, Lalev Georgi¹, Dimov Stefan¹, Coppo Paolo², Tattersha Carin³, Turner Micheal²,
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- P-NIL-42 **Fabrication of Photonic Components by Nanoimprint Technology within ePIXnet**

Ulrich Plachetka¹, Anders Kristensen², Stijn Scheerlinck³, Neil Whitbread⁴, Jurriaan Huskens⁵, Nam Il Koo¹, Heinrich Kurz¹,
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³Ghent University-IMEC, GHENT, Belgium,
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NORTHAMPTONSHIRE, United Kingdom,
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- P-NIL-43 **ROLL TO ROLL METHOD TO PRODUCE FLUIDICS CHANNELS ON PLASTIC WEB**
 Tapio Mäkelä, Tomi Haatainen, Päivi Majander, Jouni Ahopelto,
 VTT, ESPOO, Finland

Nanoscale Engineering and Fabrication

- P-NSC-1 **Physical Characterization and Electrical Properties of High-k Sol-Gel-Derived Zirconium Dioxide Films Prepared from 1-Octanol Solvent**
 Fu-Hsiang Ko,
 National Chiao Tung University, HSINCHU, Taiwan
- P-NSC-2 **Fabrication of Two-Layer Stacked Poly-Si TFT CMOS Inverters Using Laser Crystallized Channel with High k gate electrode and metal gate**
 Soon Young Oh¹, Chang-Geun Ahn¹, Jong Heon Yang¹, Woo Hyun Lee², Won Ju Cho², Jang Moon Gyu¹,
¹ETRI, DAEJEON, South-Korea,
²Kwangwoon University, SEOUL, South-Korea
- P-NSC-3 **Electrical property of conducting microbeads prepared with a novel electroless plating method by using gold nanoparticle**
 Yojiro Yamamoto, Shintaro Takeda, Hiroshi Shiigi, Tsutomu Nagaoka,
 Osaka Prefecture University, SAKAI, Japan
- P-NSC-5 **Mirror electron microscope for inspecting of nanometer-sized defects in magnetic media**
 Tomokazu Shimakura, Yoshio Takahashi, Masakazu Sugaya, Tadashi Ohnishi, Masaki Hasegawa, Hiroya Ohta,
 Hitachi Ltd., TOKYO, Japan
- P-NSC-6 **Narrow paths beyond limits of lithography**
 Michal Zaborowski, Piotr Grabiec,
 Inst. of Electron Technology, WARSAW, Poland

- P-NSC-7 **In-line transmission electron microscopy for micro and nanotechnologies R&D**
 Vincent Delaye, François Andrieu, François Aussenac, Olivier Faynot,
Cea Leti Minatec, GRENOBLE CEDEX 9, France
- P-NSC-8 **Nanofabrication of SiC templates for direct hot embossing for metallic photonic structures and meta materials**
 Yifang Chen¹, Yun Zhou², Zheng Cui¹, Ejaz Huq¹, Genhua Pan²,
¹*Rutherford Appleton Laboratory, DIDCOT, United Kingdom,*
²*School of Computing, Communication and E, PLYMOUTH, United Kingdom*
- P-NSC-9 **Focused metal cluster beams for local deposition and organisation of high purity nanostructures**
 Jacques Gierak¹, Ali Madouri¹, Joël Thomas²,
¹*LPN-CNRS, MARCOUSSIS, France,*
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- P-NSC-12 **Evaluation of surface roughness of ULE substrates machined by Ar+ ion beam**
 Yuichi Kurashima¹, Shuuhei Miyachi¹, Iwao Miyamoto¹, Manabu Ando², Atsushi Numata²,
¹*Tokyo University of Science, NODA, Japan,*
²*EUVA, UTSUNOMIYA, Japan*
- P-NSC-13 **Improving the conductivity of platinum-containing nano-structures created by electron-beam-induced deposition**
 Aurelien Botman¹, Marcel Hesselberth², Hans Mulders³,
¹*Philips Research Laboratories, EINDHOVEN, The Netherlands,*
²*Leiden University, LEIDEN, The Netherlands,*
³*FEI Electron Optics, EINDHOVEN, The Netherlands*
- P-NSC-14 **Aluminium pre-patterning for highly ordered nanoporous anodized alumina**
 Davide Piccinin¹, Maria Chiara Ubaldi¹, Virginia Stasi², Silvia Maria Pietralunga¹, Gianluca Cattaneo³, Silvia Franz³, Massimiliano Bestetti³,
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- P-NSC-15 **A comparative study of single nano-objects interconnection schemes**

Antonio Della Torre¹, Pasquale Marzo²,
Giuseppe Maruccio², Roman Krahne², Liberato
Manna², Roberto Cingolani², Rosaria Rinaldi²,
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P-NSC-16 **Chemical engineering of Silicon oxide surfaces using Micro-Contact printing for localizing adsorption events of nanoparticles, dendrimers and bacteria**
Jean-Christophe Cau, Aline Cerf, Christophe Thibault, Childéric Séverac, Jean-Pierre Peyrade, Christophe Vieu,
Laas-cnrs, TOULOUSE, France

P-NSC-17 **Reusability of nanostencils for the patterning of Aluminum nanostructures by selective wet etching**
Oscar Vazquez-Mena, Guillermo Villanueva, Marc A. F. Van den Boogaart, Veronica Savu, Juergen Brugger,
Ecole Polytechnique Fédérale de Lausanne, LAUSANNE, Switzerland

P-NSC-18 **Electron Biprism Fabrication by Focused-Ion-Beam Etching and Chemical-Vapor-Deposition**
Ken-ichiro Nakamatsu¹, Yamamoto Kazuo², Hirayama Tsukasa², Matsui Shinji¹,
¹*University of Hyogo, HYOGO, Japan*,
²*Japan Fine Ceramics Center, NAGOYA, Japan*

P-NSC-19 **Fabrication of nano-structure on GC using dry etching**
Jun Taniguchi,
Tokyo University of Science, NODA CHIBA, Japan

P-NSC-20 **LARGE AREA SUBMICRON-SIZED OLEDs ARRAY by NANOSPHERE LITHOGRAPHY**
Michelle Manca,
National Nanotechnology Labs, LECCE, Italy

P-NSC-21 **High-speed fabrication of Nano-structured optical devices with wide area**
Kazuma Kurihara,
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P-NSC-22 **Electrical and structural characterisation of single ZnO nanorods**
Thomas Weimann¹, Peter Hinze¹, Eva Schlenker², Andrey Barkin³, Augustin Che Mofor³, Bianca Postels³, Andreas Waag³,

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- P-NSC-23 **Molecular Dynamics Study on Electron-Beam Assembly of Carbon Nanotubes**
Masaaki Yasuda,
Osaka Prefecture University, OSAKA, Japan
- P-NSC-24 **Effect of Si-doping in In droplets on InP ring-like nanostructures on In_{0.49}Ga_{0.51}P grown by droplet molecular beam epitaxy**
Somchai Ratanathamphan, Wipakorn Jewasuwat, Somsak Panyakeow,
Somchai Ratanathamphan,
Chulalongkorn University, BANGKOK, Thailand
- P-NSC-25 **Transient Enhanced Diffusion(TED) of Boron in Silicon Substrate**
Soon-Yeol Park, Bum-Goo Cho, Young-Kyu Kim,
Inha Univ., INCHEON, South-Korea
- P-NSC-26 **Ab-initio Calculations for Neutral Indium Migration in Biaxially Strained Silicon**
Young-Kyu Kim, Bum-Goo Cho, Soon-Yeol Park, Taeyoung Won,
Inha University, INCHEON, South-Korea
- P-NSC-27 **Hybrid polymer/semiconductor microtubes: a new fabrication approach**
Cristian Giordano¹, Maria Teresa Todaro¹, Marco Palumbo², Laura Blasi¹, Vito Errico¹, Abdelmajid Salhi¹, Antonio Quattieri¹, Giuseppe Gigli¹, Adriana Passaseo¹, Massimo De Vittorio¹,
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- P-NSC-28 **Focused ion beam nano-structuring of Al₂O₃ dielectric layers for photonic applications**
Feridun Ay,
University of Twente, ENSCHEDE, The Netherlands
- P-NSC-29 **Evaluation of nanomechanical, nanotribological and adhesive properties of ultrathin polymer resist film by AFM**
Adam Koszewski¹, Zygmunt Rymuza¹, Freimut Reuther²,

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- P-NSC-30 **An investigation of scanning probe microscopy on hydrophobic and hydrophilic surfaces carried out from atmospheric pressure plasma processes**
Mao-Nan Chang¹, H.-M. Lin², T.-H Chou², W.-T. Hsieh³, C.-W. Chen³,
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- P-NSC-31 **Swelling of cross-linked polystyrene spheres in toluene**
Renhua Zhang, Andreas Best, T. Cherdhirankorn, K. Koynov, K. Graf, Ruediger Berger,
Max Planck Institute for Polymer Research, MAINZ, Germany
- P-NSC-32 **High-density plasma silicon oxide thin films grown at room-temperature**
Maria-Elena Vlachopoulou¹, P. D Dimitrakis¹, A. Tserepi¹,
V.Em.V Vamvakas¹, S. K Koliopoulou¹, P. Normand¹, E. Gogolides¹, D. Tsoukalas²,
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- P-NSC-33 **Towards a LED based on a photonic crystal nanocavity for single photon sources at telecom wavelength**
Annamaria Gerardino¹, Marco Francardi², Laurent Balet³, Nicolas Chauvin³, Christelle Monat³, C Zinoni³, LHL Li³, BA Alloing³, NT Le Thomas³,
R Houdre³, Andrea Fiore³,
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²*CNR-IFN, ROME, Italy,*
³*EPFL, LAUSANNE, Switzerland*
- P-NSC-34 **Electrical properties of ErSi₂ nanowires formed on Si substrates**
Satoshi Yokoyama¹, Yusuke Katayama¹, Tomohiro Kobayashi²,
Takashi Meguro², Xinwei Zhao¹, Ryouki Watanabe¹,
¹*Tokyo University of Science, TOKYO, Japan,*
²*RIKEN, SAITAMA, Japan*

- P-NSC-35 **Electrothermal microgrippers for pick and place operations**
Karin N. Andersen,
*Technical University of Denmark, KGS.
LYNGBY, Denmark*
- P-NSC-36 **Electronic Structure of Embedded InAs Quantum Dot Molecules**
Nitidet Thudsalingkarnsakul, Teeravat Limwongse, Naparat Siripitakchai, Somsak Panyakeow, Songphol Kanjanachuchai,
Chulalongkorn University, BANGKOK, Thailand
- P-NSC-37 **Line Edge Roughness (LER) reduction strategy for SOI waveguides fabrication**
Stefano Sardo¹, F. Giacometti¹, S. Doneda¹, U. Colombo¹, M. Di Muri¹, A. Donghi¹, R. Morson¹, G. Mutinati¹, A. Nottola¹, Massimo Gentili¹, M.C. Ubaldi²,
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²*CoreCom, MILAN, Italy*
- P-NSC-38 **Supercritical Drying for Suspended Silicon Nanowire MOSFETs**
Jens Bolten,
AMO GmbH, AACHEN, Germany
- P-NSC-39 **Electrical properties of Ag-doped Ge-Se and Cu-doped Ge-Se chalcogenide thin films used for Programmable Metallization Cell**
Hong-Bay Chung,
Kwangwoon University, SEOUL, South-Korea
- P-NSC-40 **Patterning Array of Multi-Walled Carbon Nanotubes by AC-dielectrophoresis**
Anupama Arun,
Ecole Polytechnique Federal De Lausanne, LAUSANNE, Switzerland
- P-NSC-42 **Selective etching of III-V-nanowires for molecular junctions**
Christian Kallesøe¹, Kristian Mølhave¹, Thomas Mårtensson², Torben Mikael Hansen¹, Lars Samuelson², Peter Bøggild¹,
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Program Overview

Sunday 23 September		
18:00 - 20:00	Registration	
19:00 - 20:30	Exhibition Opening	
19:00	Welcome reception.	
Monday 24 September		
08 :30 – 9 :00	Opening of MNE07 conference	
09 :00 – 10 :30	Plenary session PL1 - Audience	
Coffee break		
11 :00 – 12 :30		
1A - Audience Nanoscale Engineering & Fabrication I	1B – 101 Process Diagnostics & Control	1C – 201 Nanodevices I
Lunch		
14 :00 – 15 :50		
2A - Audience Micro & Nanosystems for Biology I	2B - 101 Nanoimprint Lithography & Technology I	1C – 201 Nanodevices II
19:00 Reception at Copenhagen City Hall		



Tuesday 25 September		
09 :00 – 10 :30		
3A - Audience Resists & Resist Processing	3B - 101 Nanoimprint Lithography & Technology II	3C - 201 Maskless Litho. & Pattern Transfer Tech
Coffee break		
11 :00 – 13 :00		
4A - Audience Micro and Nanosystems for Biology II	4B - 101 Nanoscale Engineering & Fabrication II	4C - 201 Electron & Ion Beam Lithography
Lunch		
Steering Group Meeting – work lunch		
14 :30 – 16 :00 Plenary session PL2 - Audience		
Coffee break		
16 :30 – 17 :30		
5A - Audience Nanoscale Engineering and Fabrication III	5B - 101 Nanodevices III	5C - 201 Electron and Ion Beam Lithography II
18 :00 Conference dinner arrival and welcome drink		
19 :00 Start of dinner show		

Wednesday 26 September		
09 :00 – 10 :30 Plenary session PL3 - Audience		
10 :00 – 11:50		
6A – Audience Microsystems & Their Fabrication I	6B - 101 Nanoscale Engineering & Fabrication IV	6C - 201 Photon Lithography & Mask Technology
Lunch		
13:00 – 14 :40		
7A – Audience Microsystems & Their Fabrication II	7B - 101 Nanoimprint Lithography and Technology III	7C - 201 Micro and Nanosystems for Biology III
Coffee break		
15 :00 – 16 :30 Plenary session PL4 - Audience		
Conference closing		